ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF ALLIED HEALTH SCIENCES

DEPARTMENT OF NURSING AND MIDWIFERY

ASSESSMENT OF FACTORS INFLUENCING THE IMPLEMENTATION OF INTEGRATED MANAGAEMENT OF NEONATAL AND CHILD HOOD ILLNESS (IMNCI) BY NURSE AT PUBLIC HEALTH INSTITUTIONS IN FOUR WOREDAS OF WEST ARSI ZONE, ETHIOPIA,2016

BY : SHEKA SHEMSI

A RESEARCH THESIS TO BE SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCES, SCHOOL OF ALLIED HEALTH SCIENCES AND DEPARTMENT OF NURSING AND MIDWIFERY FOR PARTIAL FULFILLMENT OF REQUIREMENT FOR THE DEGREE OF MASTERS IN PEDIATRIC AND CHILD HEALTH NURSING.

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ACRONYMS AND ABREVATIONS

AIDS- Acquired Immunodeficiency Syndrome

CAH-Child and Adolescent Health and Development

EDHS-Ethiopian Demographic Health Survey

FMOH-Federal Minister Of Health

HEWs-Health Extension Workers

HC-Health Center

HIV -Human Immune virus

ICCM-Integrated community case management

IMCI -Integrated Management of Childhood Illness

IMNCI -Integrated Management of Neonatal and Child Hood Illness

MDG –Millennium Developmental Goal

PHCNs- Primary Health Care Nurses

SDGs- Sustainable Developmental Goals

SNNPR –Southern Nation, Nationalities and People Region

UNICEF- United Nation International Children Emergency Fund

UNIGME-United Nations Intergroup for Mortality Estimation

WHO-World Health Organization

ABSTRACT

Background-Every year, nearly 11 million children die before reaching their fifth birthday. In response to this challenge, World health organization (WHO) and United Nations for Children's fund (UNICEF) in the early 1990s developed Integrated Management of Childhood Illness (IMCI), a strategy designed to reduce child mortality and morbidity in developing countries. Research that examines assessment of factors influencing the implementing the integrated management of neonatal and childhood illnesses (IMCI) strategy in Ethiopia is limited.

Objective- To assess factors influencing the implementation of the IMNCI strategy by nursesin public health institutions of West Arsi zone, South West Ethiopia, 2016.

Method- An institutional based cross-sectional studywas conducted from February to March. A total of 185 nurses were selected using proportionally allocated to population size andinterviewed using structured and pretestedquestionnaires. Data was coded, entered and cleaned using Epi-data 3.1 and exported to SPSS version 22 for analysis.Univariate and bivariate analysis was performed. Multivariate analysis was also done to control for possible confounding variables

Results: Data were obtained from 185 nurses, yielding a response rate of 100%. The overall IMNCI implementation was 58.7% as high level implementation and 41.3% as low level implementation. In multivariate analysis the implementation of IMNCI was higher among IMNCI trained nurses ([AOR=2.76, 95%CI: 1.388, 5.51] and among those whose always referring chart booklet [AOR=2.95, 95%CI: 1.48, 5.89].

Conclusion:IMNCI strategy can be better implemented through provision of training for the health workers. However, a variety of factor found to be a barrier to IMNCI implementation in a consistent way. Recommendations have been made related to provision of the training to the nurses and HealthCare system strengthening among others.

Keywords: Public heath instructions, Nurses, Integrated management of Neonatal and Childhood illness (IMNCI), Factors influencing the implementation of IMNCI,

CHAPTER 1: INTRODUCTION

1.1. Background

The World Health Organization (WHO) defines integrated service delivery as the ~~t~~he management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system" [1].

The Integrated Management of Neonatal and Childhood Illness (IMNCI) strategy is an integrated approach to child health that holistically focuses on the well-being of the whole child. The IMCI strategy aims to reduce illness, disability, and death, and to promote improved growth and development among children under 5 years of age. The strategy includes both preventive and curative elements that are implemented by families, communities, and health care facilities [2-4].

Implementation of integrated management of childhood illness (IMCI) in comprehensive and holistic approach that forms bench mark for basic child health in promoting celebration of fifth birth day for children below five years of age, free from Malaria, Pneumonia, Diarrhea, Measles and Malnutrition [3-5].

The Integrated Management of Childhood Illness (IMCI) remains the cornerstone for child survival strategies and for improving the quality of care provided to sick children in health facilities in over 100 countries [5].

Every year some 12 million children in developing countries die before they reach their fifth birthday. Seven in ten of these deaths are due to acute respiratory infections (mostly pneumonia), diarrhoea, measles, malaria or malnutrition. The WHO Department of Child and Adolescent Health and Development (CAH), in collaboration with eleven other WHO programmes and UNICEF, has responded to this challenge by developing the Integrated Management of Childhood Illness (IMCI) strategy [3,6].

The main objectives of the strategy are to reduce death and the frequency and severity of illness and disability, and to contribute to improved growth and development [6].

The Integrated Management of Childhood Illness (IMCI) remains key strategy to reducing child mortality. The strategy includes improving case management skills of sick children at first level health facilities, strengthening health system and improving family and community to promote child health. In Africa region, 22 countries are now implementing IMNCI in over 75%of districts, compared with only 10 countries in 2007 [7].

Ethiopia has one of the highest under-five mortality rates with more than 321, 000 children under the age of five dying every year. As children usually present with more than one of the preventable disease conditions, it was recognized that there was need for an integrated approach in order to manage the child in a holistic manner. This led to the development of IMNCI strategy which integrates all available measures for health promotion, prevention and integrated management of childhood diseases through their early detection and effective treatment, and promotion of healthy habits within the family and community [8].

The importance of having an Integrated Management of Newborn and Childhood Illness strategy is that it enables a consistent and standardized approach that addresses the major causes of under-five morbidity and mortality which are responsible for more than 90% of the mortality in this age group in Ethiopia [3, 8].

The strategy includes three main components:

- Improvements in the case-management skills of health staff through the provision of locally adapted guidelines on IMCI and through activities to promote their use.
- Improvements in the health system required for effective management of childhood illness.
- Improvements in family and community practices [9].

The first and second international consultant training on IMNCI implementation were conducted in Addis Ababa in November 1995 and May 1996 respectively, using semi-adapted IMNCI training materials for Ethiopia. The Federal Ministry of Health (FMOH) selected three regions for initial implementation: Tigray, Southern Nation, Nationalities and Peoples Region (SNNPR) and Addis Ababa. The first and second national IMNCI review and re-planning workshops were conducted in March 2001 and 2004 respectively. All regions have included IMCI in their annual health plan of action and are actively implementing IMNCI [10].

1.2 Statement of the Problem

Several studies conducted in different countries indicated that the implementation of the IMNCI strategy is still inadequate. These studies also mentioned a variety of factors that influences the implementation of the strategy by health workers. The most common identified problems are lack of training, poor supervision, lack of IMNCI essential drugs and on jobs aid, health workers perception, shortage of the staffs, nature of the strategy and lack of support from the government and stake holders [11-22].

Every day about 16,000 under five children continue to die in 2015, most of them will perish from preventable causes, such as pneumonia, diarrhea and malaria [23].

Annually 1.12 million neonatal deaths occur in the African region which accounts quarter of all under five deaths. Half of these deaths occur in just five countries-Ethiopia, Nigeria, Democratic Republic of Congo, United Republic of Tanzania and Uganda. Saving these lives would take and estimated extra US $ 1.39 per capita per year. It is also estimated that every minute eight under five children die in sub-Saharan Africa. Two third of this deaths occurs due preventable cause of deaths such as pneumonia 21%, malaria 18%, diarrheal diseases 16%, measles 5% and HIV/AIDS 6% most of which complicated by malnutrition that accounts one third of all deaths in children under five years [24].

Ethiopia adopted the IMCI strategy in 1996 in attempt to reduce the infant and under-five mortality rates (8). Recent reports indicate that neonatal mortality, infant mortality and under-5 mortality stand at 37, 59 and 67, respectively per 1000 live births [25-26].Although Ethiopia has achieved Millennium Developmental Goal MDG 4 targets of reducing child mortality and witnessed a steady reduction in child mortality (more than 40%) across the country ,over 300,000 children under the age of five still die each year from preventable or treatable conditions such as diarrhea, ARI primarily pneumonia, and malaria, neonatal problem in combination with malnutrition [26-27].

Health facility surveys carried out in three regional states of Ethiopia: Amhara, Oromia and Southern Nations and Nationalities Peoples‘ (SNNP) indicated low coverage of IMCI in the regions. IMCI coverage was 20% for Amhara, 4% for Oromia, and 25% for SNNP Region. The percentage of trained targeted health workers in the three regions was even lower than the IMCI

coverage. The proportion of under-five cases assessed by IMCI trained health workers ranged from 0% in Oromia, to 16% in Amhara and 32% in SNNP region [28].

Regarding the factors that influences IMNCI implementation this survey also revealed that Consultation time was lower than recommended by IMCI guidelines (15 to 20 minutes) although it was higher for IMCI trained health workers (13 minutes in average). Supplies were available for most health facilities but there was inadequate supervision. The integrated index of assessment was on average 0.42 of the recommended 10 variables. Most children were not checked for general danger signs, nutritional status or vaccination. There was over classification of pneumonia and under classification of malaria in all three regions and the percentage of children treated correctly was low [28].

A variety of efforts has been made by the government of Ethiopia In attempt to overcome this problem and further reduce child mortality rate .For example trying to increase the cumulative number of Health centers (HC) providing Integrated management of neonatal and childhood illness and training Health Extension Workers (HEWs) on the issues to manage childhood illness at community level, however the implementation of the IMNCI strategy may get hampered by many challenges [27, 29-30].

Multi-country survey on global challenges with scale up of the IMNCI revealed that the perceived challenges in implementing the IMNCI strategy in Ethiopia are Long duration of training , Prohibitive financial regulations , Inadequate Funds for supervision , training, printing, refreshments, videos, and also Lack of material, transport, clinical instructors [31].

To best of the researcher knowledge, there are no sufficient research reports onfactors influencing implementation of the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) strategy in Ethiopia. The researcher believes that the scarcity of available data on this topic in the study area has limited the development of intervention strategies in line with MGD-4and SDG. Hence, this study is aimed at assessing factors influencing IMNCI implementing by nurses West Arsi Zone, Oromia Region, Ethiopia.

1.3 Significance of the study

Now a day the integrated management of childhood illness strategy is playing an important role in reduction of child mortality and morbidity. In Ethiopia the study conducted on the factors influencing the implementation of the IMNCI strategy is not yet documented. Therefore this study seeks to assess the factors influencing the implementation of IMNCI strategy by the nurses in West Arsi zone.

Thus this study finding will provide clear information about the factors that influence the implementation of the strategy.

Therefore firstlythe data from this study will be useful to health planners such as those at Ministry of Health and nongovernmental organization working on integrated management of neonatal and child hood illness and will also enable such bodies to design better programs to address the identified problems.

Secondly the study findings will be useful for the community in reduction of under-five mortality and morbidity.

Lastly, this paper will be used as important literature for future researchers who want to undertake similar study.

CHAPER 2: LITERATURE REVIEW

2.1. Introduction

This section presents the result and the idea taken from different studies that was reviewed from different literature including journals ,articles and other literature related to this topic that deals with factor influencing implementation of Integrated management of neonatal and childhood illness by health workers in health institutions

2.2 IMNCI, Neonatal and Child Health

Annual number of deaths among children less than 5 years of age has decreased by almost a third over the last three decades though the reduction is not similarly distributed around the world. In developing countries over 10 million children die every year before they reach their fifth birth day. Seven in 10 of these deaths are due to acute respiratory infections (mostly pneumonia), diarrhea, measles, malaria, or malnutrition - and often to a combination of these illnesses [1]. As indicated in 1996 analysis unless greater efforts are made to control childhood illnesses they will continue to be major contributors to child deaths through the year 2020.due to this assumption that the new strategies to significantly reduce child mortality and improve child health was introduced [3,32].

During the mid-1990s, the World Health Organization (WHO), in collaboration with UNICEF and many other agencies, institutions and individuals, responded to this challenge by developing a strategy known as the Integrated Management of Childhood Illness (IMCI)which is composed of preventive and curative interventions that aims to improve practices and the quality of management of childhood illness linking the programs, such as immunization, nutrition, control of malaria and other infectious disease in health facilities, the health system and at home to be implemented in an integrated manner [9,33].

IMNCI adopts an algorithmic approach that encourages health providers to address a sick child in a systematic manner to address several medical conditions,that often coexist,rather than the presenting symptom only which often is the case when child health programs are implemented in a vertical fashion.Apart from treating medical condition,the strategy insists that each contact with the child can be utilized for preventive and promotive health interventions [34].

Ethiopia adopted the Integrated Management of Neonatal and Child hood illness strategy in 1996 with the aim of reducing the unacceptably high child hood mortality and morbidity and to promote child health and development [10, 35].

2.3 Global Burden of Neonatal and Child Deaths

Child mortality is a core indicator for child health and well-being including health and nutrition status. It is also a key indicator of the coverage of child survival interventions and, more broadly, of social and economic development [36].World leaders agreed on the millennium developmental goals (MDGs) in 2000 and called for reducing the under-five mortality rate by two thirds between 1990 and 2015 known as the MDG 4 target [37].

In June 2012, world leaders renewed their commitment during the global launch of Committing to Child Survival. A Promise Renewed, aiming for a continued post-2015 focus to end preventable child deaths. With the end of the MDG era, the international community is in the process of agreeing on a new framework – the Sustainable Development Goals (SDGs). The proposed SDG target for child mortality represents a renewed commitment to the world‘s children: By 2030, end preventable deaths of newborns and children under five years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 deaths per 1,000 live births and under-five mortality to at least as low as 25 deaths per 1,000 live births [37-38].

The world has made substantial progress in improving child survival in the past 25 years. The global under-five mortality rate dropped 53 (50, 55) percent, from 91 (89, 92) deaths per 1,000 live births in 1990 to 43 (41, 46) in 2015). Globally, the annual number of under-five deaths dropped from 12.7 million to 6 million in 2015. Despite substantial gains, progress is insufficient to achieve the MDG 4 target yet and the progress has not been enough, and the target risks being missed at global level [36-37, 39].

The global under-five mortality rate needs to be reduced to 29 deaths per 1,000 live births which implies an annual rate of reduction of 14.2 percent for 2011–2015, much higher than the 2.5 percent achieved over 1990–2011[40].

At the regional level, all MDG regions except Oceania have more than halved the under-five mortality rate. Eastern Asia, Latin America and the Caribbean, and Northern Africa have reduced the under-five mortality rate by two thirds or more since 1990. At the country level, about a third of countries (62) have reduced their under-five mortality by two thirds or more and achieved the MDG 4 target set in 2000. Among them are 12 low-income countries including Ethiopia and another dozen middle income countries and an additional 74 countries reduced their under-five mortality rates by at least half and another 41 countries by at least 30 percent [37].

According to UNICEF (2015) reports that from all the under five deaths, almost 45 percent occur in the neonatal period due to many complications. Globally, infectious diseases, prematurity and complications during labour and delivery are the main causes of death for children under age 5. Infectious diseases account for about half of global under-five deaths. Of the 5.9 million under-five deaths in 2015, almost half were caused by leading infectious diseases and conditions such as pneumonia, diarrhoea, malaria, meningitis, tetanus, measles, sepsis and AIDS.7 Globally, the main killers of children under age 5 in 2015 were preterm birth complications (18 per cent), pneumonia (16 per cent), intrapartum-related complications (12 per cent), diarrhoea (9 per cent) and sepsis/meningitis (9 per cent) [41].

2.4. Regional Child Mortality

Accelerating progress in child survival urgently requires greater attention to ending preventable child deaths in Sub-Saharan Africa and Southern Asia. Under-five deaths are increasingly concentrated in Sub-Saharan Africa and Southern Asia, while the share in the rest of the world dropped from 32 percent in 1990 to 18 percent in 2013.Though Sub-Saharan Africa has seen the decline in the under-five mortality rate accelerate, with the average annual rate of reduction increasing from 0.8 percent in 1990–1995 to 4.2 percent in 2005–2013, the region still has the highest child mortality rate 92 deaths per 1,000 live births, more than 15 times the average for developed regions. By 2050 close to 40 percent of all births will take place in Sub-Saharan

Africa, and 37 percent of children under age five will live there, so the number of under-five deaths could stagnate or even increase without more progress in the region [36].

Sub-Saharan Africa has the highest risk of death in the first month of life and is among the regions showing the least progress. About half of under-five deaths occur in only five countries: India, Nigeria, Democratic Republic of the Congo, Pakistan and China. [40,42].

Among the ten MDG regions, sub-Saharan Africa contributed roughly half (49·6%, 3·113 million) of under-5 deaths worldwide in 2013, and southern Asia almost a third (32·1%, 2·015 million [43].

The leading causes of death among children under age five are pneumonia (18% of all under-five deaths); preterm birth complications (14%); diarrhea (11%); intrapartum related complications (complications during birth; 9%); and malaria (7%). Globally, more than a third of under-five deaths are attributable to under nutrition [36, 38].

2.5. Child Mortality in Ethiopia

In 1990, the under-five mortality rate for Ethiopia was one of the highest in the world at 204 per 1,000 live births. Nevertheless, by 2011 and 2013, according to 2011 EDHS findings and the 2013 United Nations Inter Group for Mortality Estimation (UN IGME), with an average annual rate of decline of 5.0%; this rate was reduced to 88 and 64 per 1,000 live births, respectively. With an under-five mortality rate of 64, Ethiopia has attained MDG4. Despite this great achievement, the trend in neonatal mortality remained stagnant and contributed a large proportion (nearly half) of the under-five mortality rate [44-45].

According to the recent World Health Statistics Report published in 2014, Ethiopia has achieved MDG 4 three years earlier by reducing under-five mortality from 1990 estimate. The Proportion of children who were dying before their fifth birthday has declined to 64 in 2013 from 204 in 1990 among 1000 live births [23].

The annual number of under-5 deaths in Ethiopia has been reduced by more than half, from an estimated 412,000 deaths in 2000 to 196,000 in 2013. In the period from 2000 through 2011, an estimated 469,000 child deaths were prevented through high-impact child health interventions,

nearly ¾ of them due to interventions that were scaled up after 2005 Major disparities in mortality rates and coverage show that many of Ethiopia‘s poorest children, and those living in rural areas and remote regions, are still excluded from essential care, and the equity gaps are getting worse. While mortality rates have improved for children in the wealthiest 80% of households, children in the poorest 20% are being left behind [44].

Several factors across multiple sectors have played a key role in driving the progress in child health. Reductions in child mortality are associated both with improved coverage of effective interventions to prevent or treat the most important causes of child mortality in particular essential immunizations, malaria prevention and treatment, vitamin A supplementation, birth spacing, early and exclusive breast feeding – and with improvements in socioeconomic conditions [45]

2.6. IMNCI implementation and Influencing Factors

The study conducted in India revealed that poor supervision and monitoring, in adequate availability of essential drug while another study conducted in Kenya found that economic, social, cultural, type of facility and in adequate stakeholders support are the major factors that affect the implementation of IMCI strategy [13, 14].
The facility survey conducted in China showed that few sick children were fully assessed, and only 43.8% were correctly classified by health workers and the use of antibiotics for sick children was high and not according to guidelines[16].

According to the study conducted in Benin 63.6% children were treated in accordance with IMNCI guidelines and Performance of individual health workers varied greatly, from 15–88 % of patients treated correctly, on average and also important performance gaps found immediately after IMCI training persisted due to inadequate supervision and monitoring[11,22].

Similar study conducted in Kenya found that utilization and implementation of IMCI concepts in the region is approximately 14% which is below standard level established (above 68%), by WHO and UNICEF, due to recurrent staff deficit and also limited resource at disposal from the region [14].

Results from multi country evaluation indicated that IMCI case management training is an effective intervention to improve the rational use of antimicrobial drugs for sick children visiting first-level health facilities in low-income and middle-income countries. In another way IMCI trained health workers are significantly more likely prescribing correct treatment than no IMCI trained workers [15].

Similar another study done in Benin also revealed that health workers with training plus study supports performed better than those with training plus usual supports (20.4 and 19.2 percentage-point improvements for recommended treatment [p = 0.08] and ~~–r~~ecommended or adequate" treatment [p = 0.01], respectively. Increased supervision frequency was associated with better care (odds ratio for recommended treatment = 2.1 [95% confidence interval: 1.13.9] per additional supervisory visit [19].

In Ghana the IMNCI implementation remained poor despite many efforts made by the stakeholders to improve the quality the utilization. The main reasons for poor implementation of the IMNCI strategy are the frontline health workers perception toward the strategy and work over load [18].

Another study conducted in Tanzania found the factors that affect health workers Adherence to IMCI protocols are poor supervision practice, shortage of facilitator and funds, reluctance to refer facility layout frequent rotation of staff within facilities and high attrition rates, feature of the strategy, lack of IMCI drugs and job aids [20].

Similar study conducted in lower resource setting country indicated that IMCI-trained workers were more likely to correctly classify illnesses (RR = 1.93, 95% CI: 1.66–2.24). Workers with lower baseline performance showed greater improvements in prescribing medications (RR = 3.08, 95% CI: 2.04–4.66), vaccinating children (RR = 3.45, 95% CI: 1.49–8.01), and counseling families on adequate nutrition (RR = 10.12, 95% CI: 6.03–16.99) and administering oral therapies (RR = 3.76, 95% CI: 2.30–6.13) after training and supervision [21].

The study conducted at community health center of Indonesia found several factors that influences IMNCI implementations including shortage of health workers trained in IMCI which were only 43% of health center had all health workers in the child care unit trained in IMCI and 40% of health center conducted on the job training. Regarding health care system supplies, only 19% of Health center (HC) had all the essential drugs and equipment for IMCI. In another way

lack of perceptions of IMCI benefits, Lack of supervision from district health office staff and low community awareness regarding the importance of IMCI were alsoreported [13, 46-47].

The survey conducted in Afghan and south Africa identified that short duration of training, lack of ongoing follow up and clinical supervision, high cost of training, lack of political support; lack of human and material resources and time for IMCI implementation, poor reading ability of health workers, and mismatch between training needs and resources available, frequent health worker turnover and poor quality of IMCI implementation by those trained specifically in the use of job aids and protocols for assessment, classification, treatment and counseling are some challenges to implement IMNCI strategy [48-49].

Multi country survey on global challenges with scale up of IMCI strategy mentioned political ,resource or cost related and strategic related and other challenges with their sub contents as follows, lack of buy in from regional stakeholders 45.2% and competing priorities 22.6% are political challenges ,while cost and human resource related factors are expensive 74.2 %, inadequate fund for printing modules 38.7%, inadequate fund38.7%,.the other challenges , long duration of course 51.6%, lack of clinical materials16.1% and lack of transport 19.4% [31].

Another study conducted in Zambia and Rwanda showed that Staff turn-over, stock-outs, lack of time due to inadequate staffing, lack of equipment, a work overload and unequal distribution of professional nurses on duty per shift, poor knowledge, lack of privacy in the facility, Human Immune Deficiency Virus HIV related stigma from both health workers and care givers and other facility/systems gaps were identified as barriers to IMCI implementation [50-52].

According to the study done in Republic of Tanzania there are three reasons contributing to health workers‘ non-adherence to IMCI guidelines; these are the use of single, narrow diagnoses rather than IMCI classifications; the belief that chloramphenicol is unacceptably toxic, and the belief that referring severely ill children is often unnecessary [53].

Review of systematic challenges to the scale-up of integrated community case management in six African countries including Ethiopia, Ghana, Malawi, Mali, Mozambique, and Niger reported that the common challenges to scale-up of intervention packages for child survival in particular the delivery approach of integrated community case management (iCCM) are ; the deployment,

supervision, motivation and retention of community health workers as the backbone of iCCM, maintaining reliable supply chains, demand side barriers to utilization, weak monitoring and evaluation systems, and the need for supportive government policies and engagement to achieve sustainable progress [54].

In several countries health worker often mentioned the increased time required for a consultation and the difficulty of following the IMCI guidelines when there is a high patient load. Additionally Staff turnover, low staff motivation due to low salary(Uganda), and Poor supervision, lack of funds for travel, hospital related expenses are also mentioned .Another challenges identified in Bangladesh, Cambodia, Niger, Cambodia and Zambia and Uganda are low use of public sector health care for a variety of reasons (accessibility, official or under-the-table user fees, perceived poor quality, lack of drugs, and so on) ,lack of separate budget for strategy, Conflict between IMCI guidelines and existing policies and regulations(Soviet republics of Kazakhstan and the Kyrgyz Republic, Morocco [55-56].

A primary Health Care Nurses (PHCNs) of selected clinic of Limpopo Province in Rwanda categorizes the difficulties of rendering IMNCI into lack of resources and poor working conditions. lack of human resources,lack of material resources,shortage of medication, Absence of computer at clinics and lack of physical resources are subcategorized under lack of resources while the lack of support by the supervisors ,burnouut related to lack of support by stake holders,lack of cooperation from community members,lack of support from media,lack of political support and sign and symptoms related to work overload are subcategorized as poor working conditions which have negative impact on the nurses [57].

In another way the problems identified in pre service IMCI training are lack of political commitment, lack of supervision, availing training materials , shortage of tutors , problems in curricula integration and shortage of IMCI teaching and learning materials, shortage of trained teachers and shortage of IMCI learning materials were reported [20,58-59].

The study done in Kenya categorized the factors affecting IMCIimplementations at three levels which include the challenges at Health worker level, facility level and community level. The health workers perception on skills uptake and case management guidelines is the main challenges at health worker level while time constraints(time taken to complete protocol, long

queues, short staffing) and inadequate facility support(medical equipment, job aids, drugs) are identified as challenges at facility level. At community level long wait times, high cost of user fees and non-compliance by care giver and patients are identified as the main challenges to implement IMNCI guidelines [60].

Broader health systems factors appear to challenge IMNCI implementation are revealed by study conducted in Tanzania as constraints to the expansion of IMCI training coverage (costs and high turnover of trained worker),factors underlying poor compliance(low training coverage, lack of health worker compliance, health system weakness), health system constraints to health worker compliance (lack of supplies, health facility set up, and human resource shortage) and limited means to document case management process which include limited supply of IMCI materials for staff in facilities, lack of recording forms[20].

The study conducted in Botswana and Tanzania found several categories of factors affecting implementation of IMNCI with their subcategories.57% of participants confirmed as the procedure is too long and 45%report time consuming,72% spent 10-29 minutes on one case,5%reported physical layout is not good for procedure and negative attitude from supervisors 42%and lack of supportive supervision for the past six month 100%, lack of follow up training 78%,lack of uniformity between IMCI trained and untrained nurse 32%,inadequate pre service training only 21%,due to cost of training 64% attended five day training despite recommended day is 11, 56.3% uses guideline only when there were few patient to attend, inadequate jobs aid for follow up 27.6% lack of knowledge were reported[61-62].

In general different studies have been done worldwide on the factors influencing the implementation of the IMNCI strategy with different recommendations, but still there are gapsthat shows as the implementation of the strategy is still poor especial in low resource setting countries like Ethiopia. Hence, this study is aimed at assessing factors influencing IMNCI implementation by nurses in West Arsi Zone, Oromia Region, Ethiopia.

2.7 .CONCEPTUAL FRAMEWORK

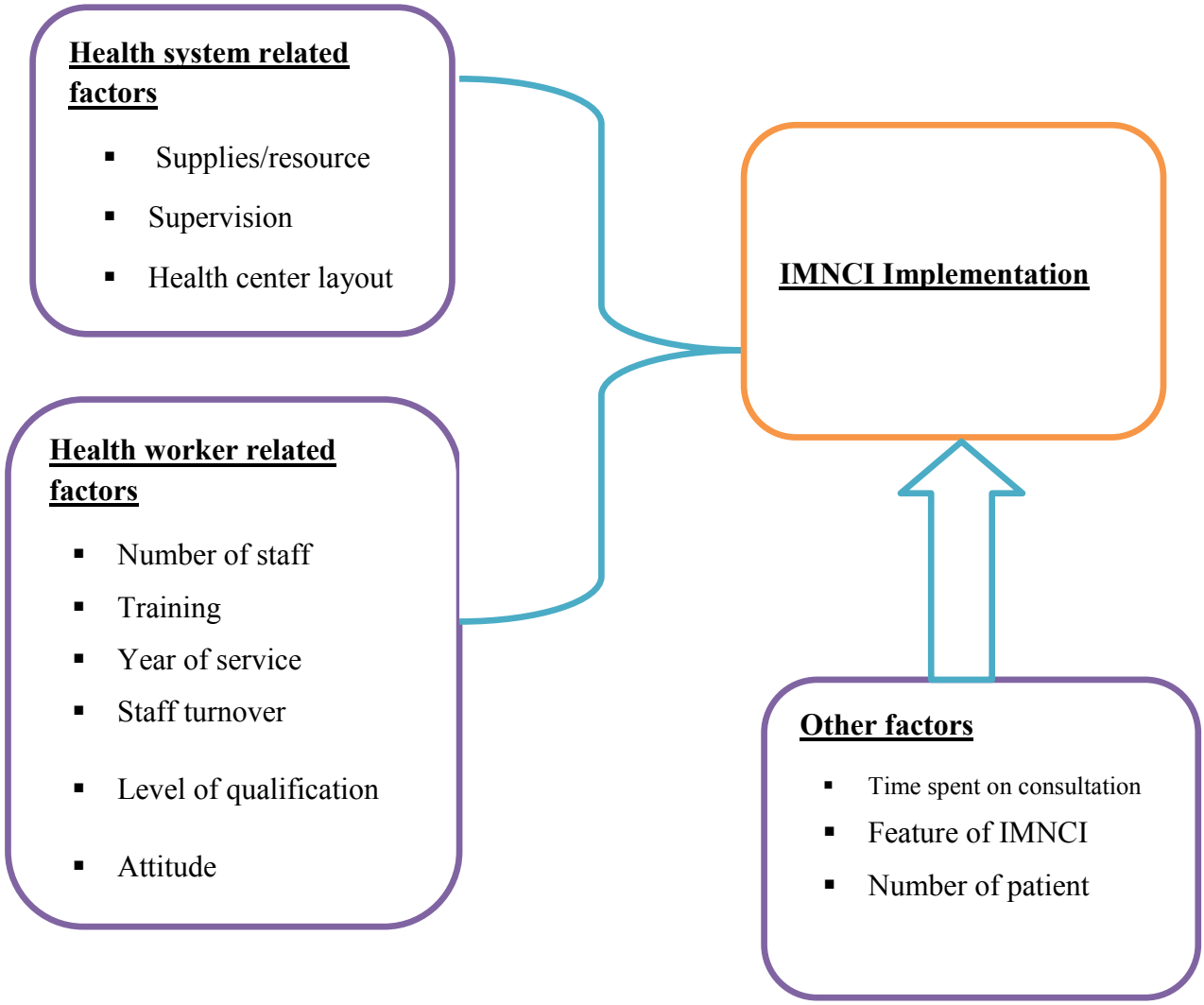

Figure 1: Conceptual framework on factors that influencing IMNCI implementation, developed by the researcher.

CHAPTER 3: OBJECTIVES

3.1. General Objective

Toassessfactorsinfluencingthe implementationofIntegrated Managementof Neonataland ChildhoodIllness (IMNCI) by nursesatpublichealth institutions in fourworedasof West Arsizonein Ethiopia" from February to March 2016

3.1. Specific Objectives

- To assess the implementation of IMNCI by nurses at public health institution of four woredas.
- To identifyfactorsinfluencingthe implementationofIMNCIbynursesat public health institution of four woredas.

CHAPTER 4: METHODOLOGY

4.1. Study area and period

The study was conducted from February to March 2016 in West Arsi zone of Oromia regional state, which is found at South East, Ethiopia. The zone has an area of 12556 Km^2, which comprises 12 Woreda and 3 town‘s administration. Shashamenne is the zonal town which is 251 km far from capital Addis Ababa [63]. According to the verbal response of West Arsi zone health bureau Administration there are 84 public health institutions (one zonal and two district Hospital, and eighty one Health center) and other one NGO hospital and private health institutions in the zone. According to human resource management verbal report of West Arsi zone in 2008E.C Eight hundred fifty (850) nurses are providing health care service in public health institution of the zone.

4.2. Study design

Institutional based cross sectional study was used

4.3. Population

4.3.1. Source population

All nurses in public health facilities of four woredas in west Arsi zone.

4.3.2. Study population

All sampled nurses who are working in public health facilities of four woredas and present on days of data collection

4.4. Inclusion criteria and Exclusion criteria

4.4.1. Inclusion criteria

Nurses providing care services at public health facilities of four woredas and consented to take part in the study.

4.4.2. Exclusion criteria

Those nurse who are sick, maternity and annual leave and also not available on dates of data collection.

4.5 Sample Size determination

The sample size was calculated based on the sloven‘s formula which is used where the prevalence is not required or known [64].

$$n=\frac{N}{1+N(e)2}$$ Where: n= sample size

N=Population size

e=sampling error (which is assumed to be 5% i.e.95% CI

$$=>\frac{291}{1+291(0.05)2} =168$$

By considering 10% non-respondent rate the final sample is **185**

4.6. Sampling procedure

First, total sample size (185) was estimated based on the total number of nurses in the four woredas. Next the determined sample is proportionally allocated to each woredas. The proportional allocation for each woredas are as follows Shashamane 46,Arsi Negele 57,Shalla 44 and Dodola 38.Then the sample proportionally allocated to each woreda was proportionally allocated to the number of each health center in each woredas. Finally, Simple Random Sampling method was used to select study units from nurse‘s staff to be included in the study based on the number of nurses of each health center in the each woredas as sampling frame.

Sampling procedure

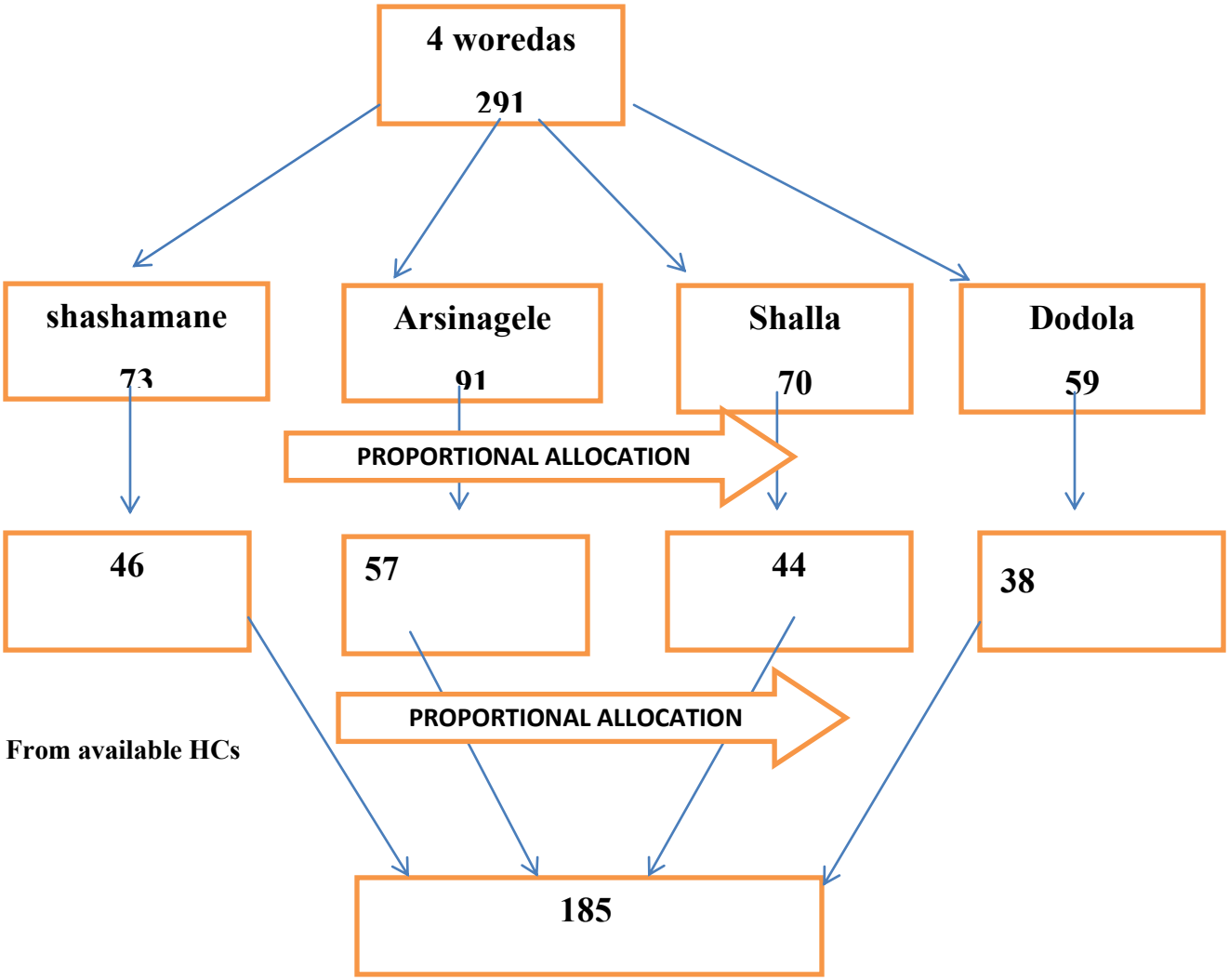

Figure 2: Schematic presentation of sampling procedures

4.7 Variables

4.7.1 Independent variable

- Socio-demographic characteristics
- Year of service
- Training
- Duration of training
- Health system layout
- Low training coverage
- Resources/supplies
- Unique features of the IMCI strategy
- Attitude of the nurse

4.7.2 Dependent variable

- IMNCI implementation

4.8. Operational Definitions

IMNCI Implementation-is an application of the strategy or the guidelines in a comprehensive and holistic manner. The level of implementation can be categorized as high level and low level [14].

Comprehensive implementation -Ability of the Facility to equip complete essential drugs & equipment for the five conditions (Malaria, Pneumonia, Diarrhea, Measles and Malnutrition) affecting children below five years of age to allow dispensation under one roof to holistically manage overlapping disease symptoms and application of all IMNCI case management process and all IMNCI activities listed by World Health Organization(WHO).

Holistic intervention- Health managing of children below five years from overlapping disease symptoms and signs, by critically assessing children before prescribing a comprehensive and holistic therapy for Malaria, Pneumonia, Diarrhea, and Measles, Malnutrition at ago.

High level Implementation:

1. Comprehensive implementation of IMNCI strategy above 68%
2. Facility offering holistic approach to child care by ensuring it has IMNCI equipment.
3. Availability of essential oral drug treatment, vaccines (measles and Vitamin A) and good referral treatment

Low level Implementation-

1. **B**elow 60% of compressive implementation
2. No IMNCI intervention put in place
3. Vertical program are still in place (such as diarrhea disease control program, malaria, pneumonia and expanded immunization program [14].

4.9. Data collection tool and procedure

Data was collected by using, structured self-administered questionnaires which ismainly adopted from WHO tool to evaluate the quality of care taker delivered to sick children attending outpatient facilities and challenges identified by experienced IMCI-1-trained registered nurses in implementing the Integrated Management of Childhood Illnesses (IMCI) Strategy inEnglish version [62, 65].The questionnaire consists of socio-demographic information,factors influencing IMNCI implementation by nurses and it was used to assess the factors influencing IMNC implementation by nurses.

After five data collection facilitators (diploma nurses) and two supervisors (BSc health professionals) are employed, training was given for one day on clarification of some terms and assessment tools, aim of the study, concerning need for strict confidentiality of respondents information, time of data collection, timely collection and reorganization of the collected data from respective health center and submission on due time. The questionnaire was filled by healthcare providers and data was collected for approximately one month including training and pretest, facilitated by data collection facilitators and supervisors.

4.10. Data quality management

To assure high quality of the data, emphasis was given in designing data collection instrument. Training was given for data collectors and the questionnaire was pre-tested on 5% nurses in kofeleworeda health center before the main survey with modification. The collected data was reviewed and checked for completeness before data entry; the incomplete data was discarded. The data collection was closely supervised by a supervisor and principal investigator.

4.11. Data Processing and analysis plan

The collected data was checked for its completeness, consistency and accuracy before analysis. Data was coded, entered and cleaned using Epi-data 3.1 and exported to SPSS version 22 for analysis.

Univariate analysis was done using frequency and percentage. Bivariate analysis also was performed. Multiple logistic regression analysis was also done to control for possible confounding variables. Those variables which were showed significant association on bivariate analysis were adjusted to each other to identify independent associated variables. P-value and 95% confidence interval (CI) for OR were used in judging the significance of the associations. P-value less than 0.05 were taken as significant association. The finding was presented by using pie chart, graph and table.

4.12. Ethical Consideration

Ethical clearance was obtained from University of Addis Ababa College of health science school of allied health sciences department of nursing and midwifery Ethical Board Committee, Research Review Board Committee and official letter was written to Oromia region health bureau and permission letter was obtained from West Arsi zone health office. Informed consent was obtained from a respondent who was participated in the study. The participation in this study is voluntary; they can also withdraw at any time from the study if they feel uncomfortable. Refusal to participate will not affect their work or care they shall seek at any of the health facilities in any way. Confidentiality was maintained by omitting their name and personal identification and participant was not compelled to the study.

4.13. Dissemination of the result plan

The results of this study will be disseminated or communicated to University of Addis Ababa College of Health Science school of Allied Health science Department of Nursing and Midwifery, west Arsi Zone Health Office, as well as Ministry of Health, Regional health bureau, local institutions and other concerned bodies through reports and publication on an appropriate journal.

CHAPER 5: RESULTS

5.1 Socio-demographic characteristics of study population

A total of 185 nurses were involved making the response rate 100%.

Among the study population 131(70.8%) were males. Regarding the age of the respondents the more than half 103(55.7%) was aged between 25—29years.The mean age was 26.65 with the range of 20-43 years (Table.1).

Concerning religion, 106(57.3%) of the nurses are Muslim. With regard to level of qualification 107(57.8%) were diploma nurses while 74(40%) were BSc nurses.

Among the study participants 103(55.7%) were currently married and the majority, 163(88.1%) were belong to Oromo ethnic group.

Table 1:Selected Socio-demographic characteristics of respondents among nurses in public health institution of four woredas, West Arsi zone April,2016.(n=185)

Variables	Frequency	Percent
Sex		
Male	131	70.8
female	54	29.2
Age of respondents		
20-24	56	30.3
25-29	103	55.7
30-34	9	4.86
35-39	9	4.86
40-44	8	4.3
Level of qualification		
MSc	4	2.2
BSc	74	40.0
Diploma	107	57.8
Marital status		
Married	103	55.7
Single	79	42.7
Divorced	3	1.6
Religion		
Orthodox	44	23.8
Muslim	106	57.3
Protestant	34	18.4
Other*	1	0.5
Ethnicity		
Oromo	163	88.1
Amhara	16	8.6
Others**	6	3.2

* Wakefata ** Gurage,Kambata,zey

5.2. **Training related and factors affecting the implementation of the IMNCI strategy**

More than half, 110(59.5%) of respondents are served as health care provider for less than five years. Of the total, 149(80.5%) respondents worked in under five outpatient department. One hundred forty six (78.9%) of the participants are served in under five OPD between 0-5years.

Regarding IMNCI training, the nearly half 107(57.8%) of respondents attended IMNCI training at different periods, at which the less than half 63(34.1%) of participants attended between 2005-2009years. Of the total, who had attended training the almost half 95(51.35%) of respondents attended in service training. One hundred sixty five (89.2%) of study participants are not received follow up training.

Concerning the factor influencing the implementation of IMNCI strategy, more than half, 104(56.2%) reported that lack of trained staff and lack of supplies,69(37.3%) as the main challenges of IMNCI implementation.(See Table 2.).

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Table 2:Distribution of Training related and factors affecting the implementation of the IMNCI strategy among nurses in public health institution of four woredas, West Arsi zone April,2016.(n=185)

Variable	Frequency	Percent
Year of service as healthcare provider		
<5years	**110**	59.5
6-10 years	**62**	33.5
10-15 years	6	3.2
>15years	7	3.8
Worked in under five OPD		
YES	149	80.5
NO	36	19.5
Year of service in under five OPD		
0-5years	146	78.9
6-10years	2	1.1
>10years	1	0.5
Attended IMNCI training		
Yes	107	57.8
No	78	42.2
Types of IMNCI training		
Pre service	12	6.48
In service	95	51.35
Period of last IMNCI training		
1996-2000	3	1.62
2001-2004	23	12.4
2005-2009	63	34.1
2010-2014	2	1.08
2015+	16	8.64
Received follow up training		
Yes	20	10.8
No	165	89.2
Period of IMNCI follow up training		
2000-2004	1	0.5
2005-2009	17	9.18
2010-2014	1	0.5
2015+	1	0.5
Factors influencing the implementation of IMNCI Strategy		
Shortage of staff	30	16.2
Time consuming	61	33
Lack of supplies	69	37.3
Untrained staff	104	56.2
Lack of supervision	51	27.6
Lack of knowledge	16	8.6
Lack of good attitude	22	11.9

5.3 Duration of IMNCI Training

Almost half off the study participants, 55(51.4%) took their IMNCI training for six days and followed by those who underwent their training for eight days 21(11.4%). (See fig 3 below)

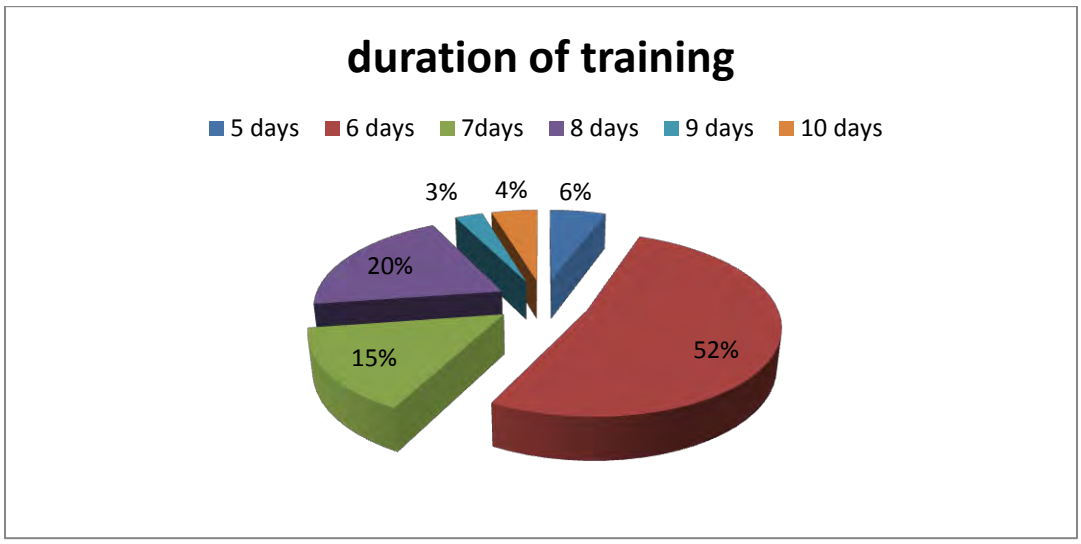

Figure 3: Duration of training

5.4 Completion of IMCI-1 training as a criterion in the assignment of daily duties to nurses

The majority, 140(75.7%) of study participants are reported that completion of IMCI training is considered in the assignment of daily duties to nurses at their respective facilities. (See figure 4)

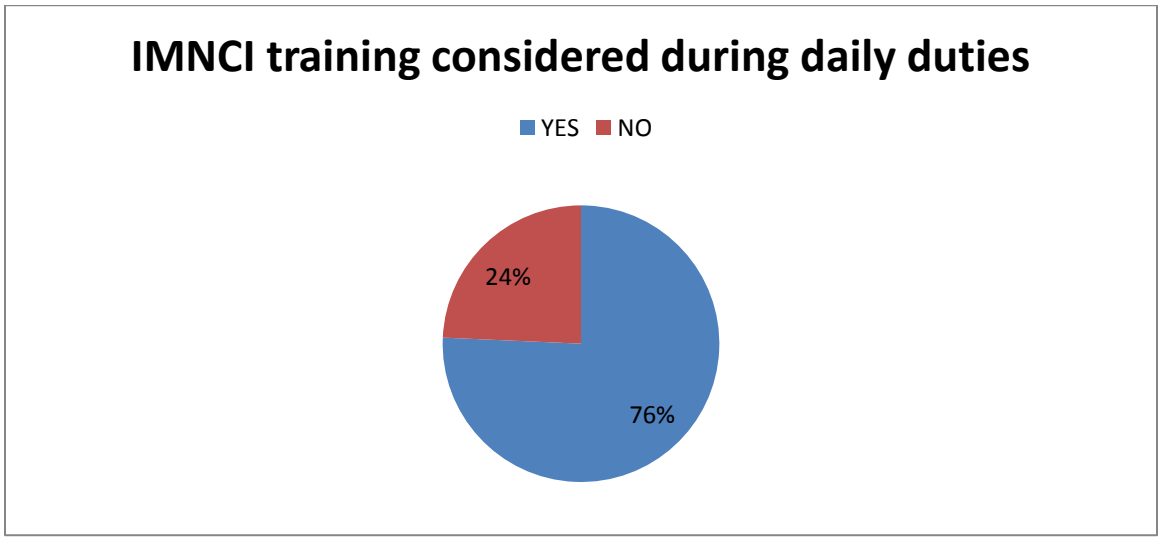

Figure 4 : Consideration of IMNCI training during assignments daily duties for nurses

5.5 Steps in the case management protocol that were found difficult to apply

The more than half of the study participants reported that all steps in the IMCI case management protocol were always found difficult for them to apply. Out of the six steps of IMNCI case management protocol the nearly half ,102(55.1%),95(51.4%),93,(50.3%) found the steps _provide follow up', Identify treatment and Classify the child illness the most difficult steps respectively. Only 51(27.6%), 58(31.4%) found the steps, –Assess the child condition and Classify the child illness" easy for them to apply respectively (See fig 5).

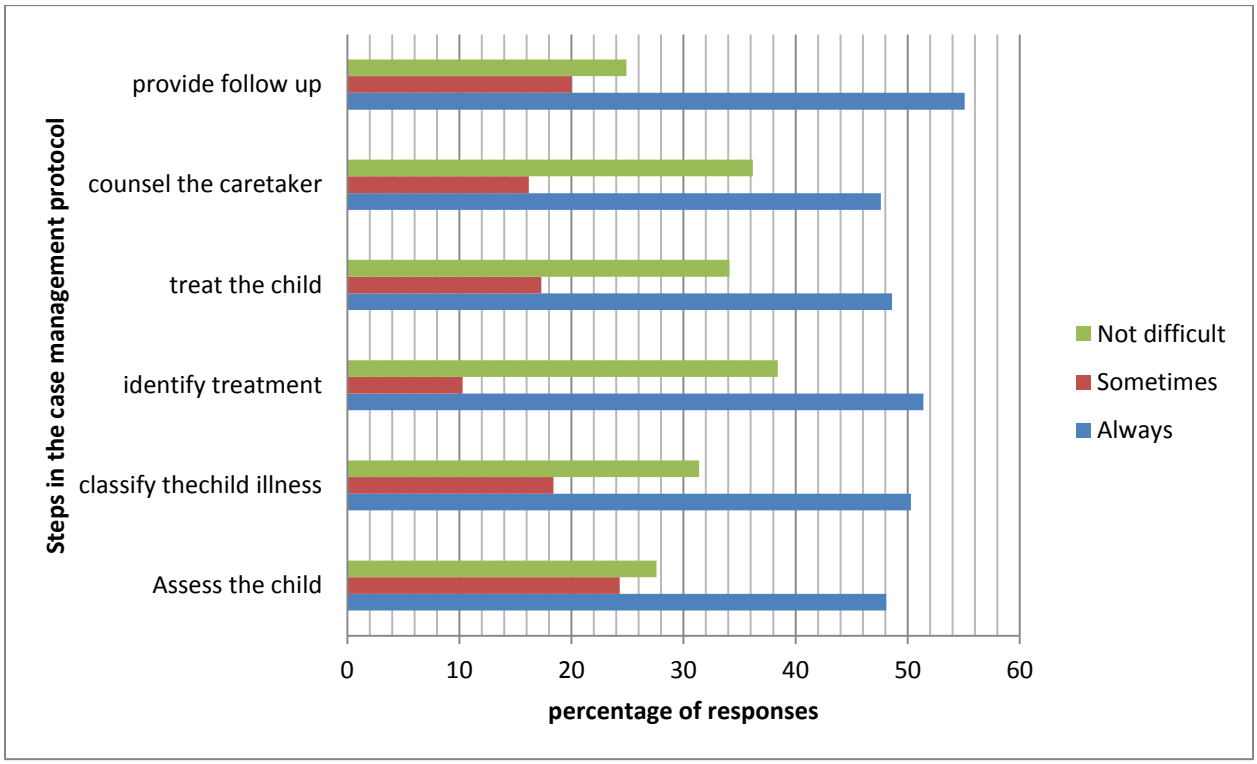

Figure 5: Steps in the case management protocol that were found difficult to apply

5.6 IMNCI activities performance of the study participants

The significant number of respondents confirmed that they are always performing the IMNCI recommended activities as per the guidelines. The majority of the study participants,167(90.2%),168(90.8%),170(91.9%),166(89.7%),166(89.7%),144(77.8%),161(87%) ,152(82.2%),133(71.9%),158(85.4%) were always performing checking for vaccination, danger sign, pallor ,assessing fever ,Diarrhea, malaria, cough, weighing children ,checking weight against chart and checking for ear problem respectively.

Only 2(1.1%) of respondents revealed as they are not performing IMNCI recommended tasks at all. (See fig 6. Below)

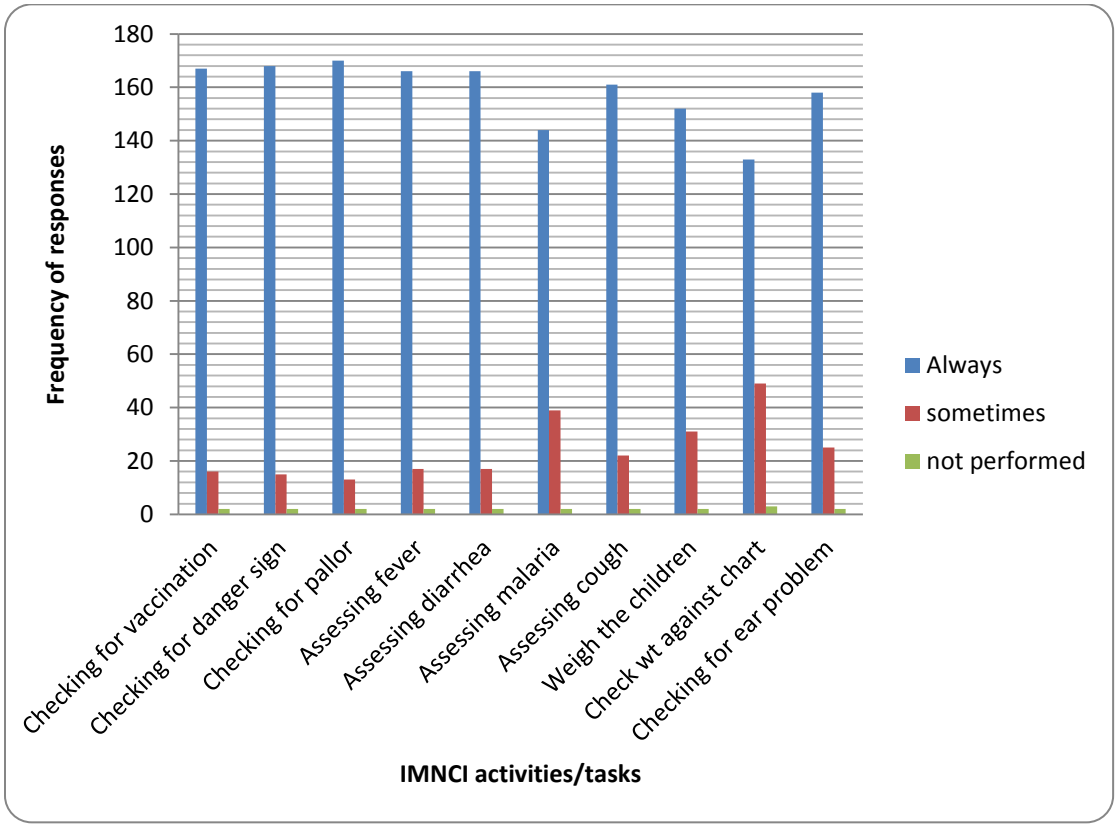

Figure 6: IMNCI activities performance of the study participants

5.7 Application of the steps in the case management protocol

One hundred twenty five 125(67.6%) of the study participants always apply all stages of integrated case management protocol followed those who are applying most of the stages of integrated case management protocol 52(28.1%).(See fig 7.below).

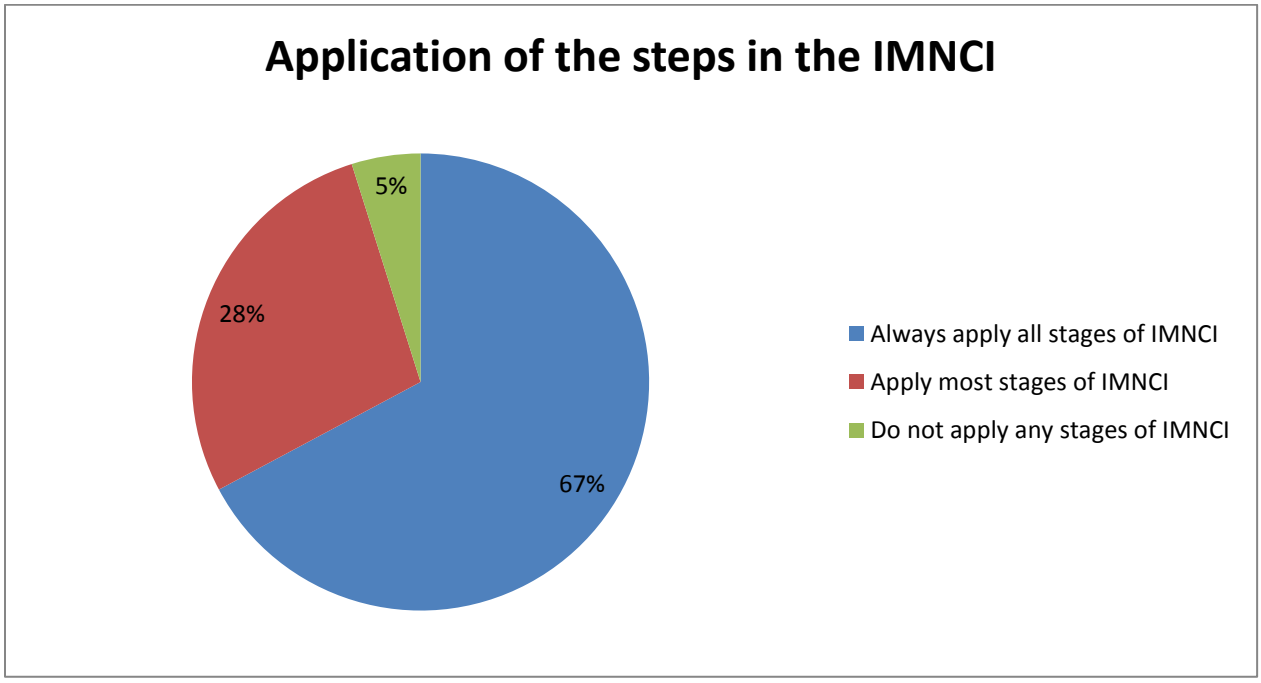

Figure 7: Steps in application of Integrated Management of Neonatal and Childhood Illness.

5.8 The effect of using the IMCI protocol on the patient nurse ratio

The more than half of respondents, 103(55.7%) strongly agreed and 39.5% agreed indicated that they provide health education to the caregivers of every child that they manage using the IMNCI protocol.

With regard to the effect of using the IMNCI protocol on the patient-nurse ratio, the frequency distributions show general agreement with the statements that were posed to respondents. One hundred twenty six(39 strongly agreed and 87 agreed) (68.1%) revealed that if they apply all the steps in the IMNCI case management protocol to every under-5 patient that they tend, they will only be able to see a handful of the under-5 patients.

Regarding the general patient-nurse ratio,85(21 strongly agreed and 64 agreed) (46%) of the respondents disclosed that if they apply all the stages of the IMNCI case management protocol to all under-5 patients, they would not be able to attend to all the other patients who are not under-5s, because of the low general patient-nurse ratio (See fig 8).

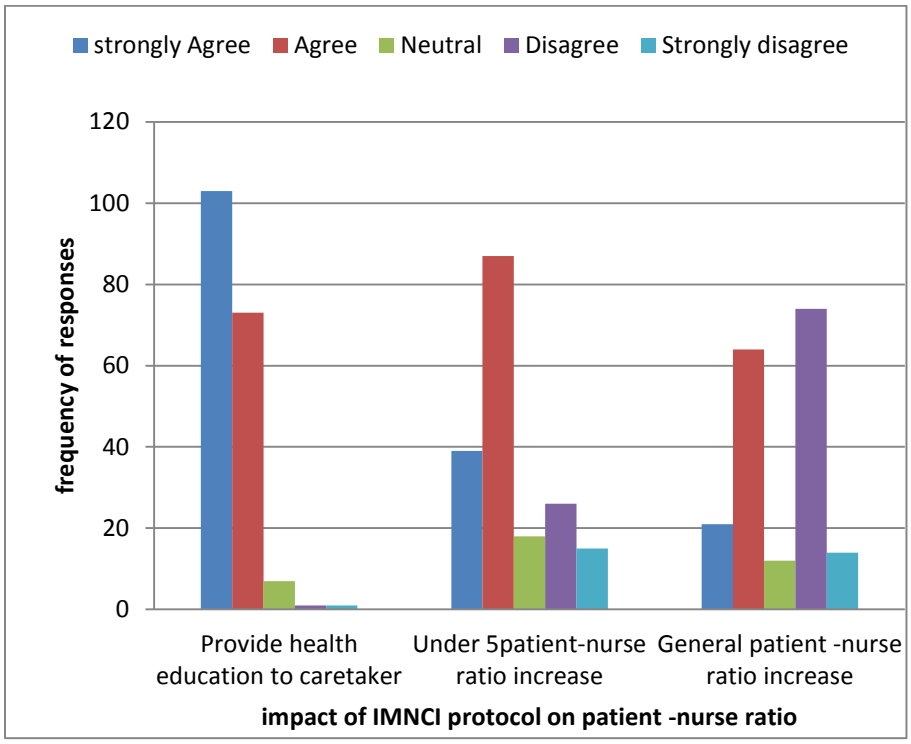

Figure 8: Impact of IMNCI protocol on Patient –nurse ratio.

5.9 Time spent managing an under-5 patient when using the IMCI case management protocol

Out of the study participants, 109(58.9%) –when using IMNCI protocol" and 86(46.48%) –when do not using IMNCI protocol" disagreed on spending more than one hour per patient. The less than half, 89(48%) of study participants agreed on spending between 30-40 minutes when using IMNCI protocol which is above WHO recommended consultation(15-20 minutes) while, only 56(30.3%) agreed on spending between 30-40 minutes when not using IMNCI protocol. The same trend was observed with regard to spending between 10-29 minutes time estimate. Nearly half of the participants (a response of 48%, n=89, to the question of –when using the IMCI protocol", and a response of 44.3%, n=82 to the question of –when not using the IMCI protocol") agreed with the idea that they spend 10-29 minutes tending an under-5 patient.

The time estimate of 1-9 minutes attracted differing responses from the study participants. Only Eight seven (47%) participants confirmed that they spend 1-9 minutes with an under-5 patient when using the IMCI protocol, while 34% (n=63) responded that they spend 1-9 minutes with an under-5 patient when not using the IMCI protocol. It is thus evident that study participants spend more time tending under-5 patients when they use the IMCI case management protocol than when they do not use the protocol (See fig 9&10).

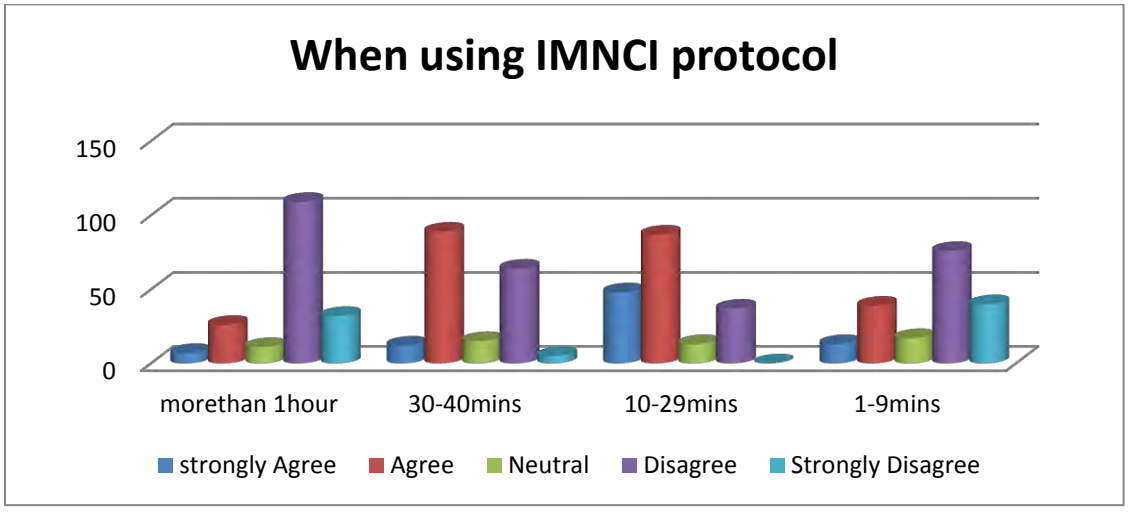

Figure 9: Time spent managing an under-5 patient when using the IMCI case management protocol

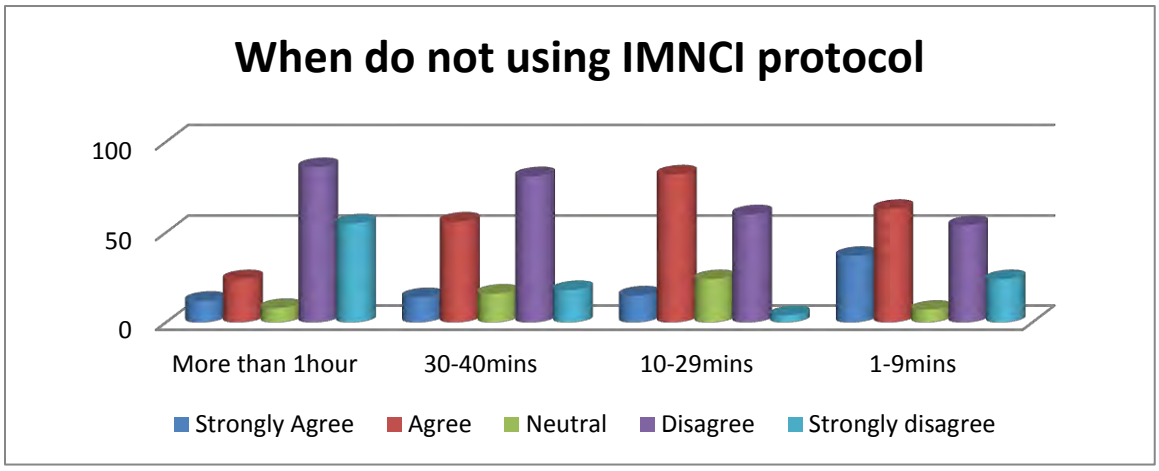

Figure 10: Time spent managing an under-5 patient when not using the IMCI case management protocol.

5.10 The impact of IMCI on case management skills

Among study participants the half, 157(53%) strongly agreed and 31.9%agreed indicated that IMNCI training had boosted their self-confidence and skills in managing patients under 5 years of age.

Regarding the question about waiting queues as a result of the amount of time spent applying all the steps in the IMNCI protocol; one hundred twenty three,123(66.5%)% strongly agreed and 50.8% agreed) disclosed that IMCI had led to longer waiting queues because more of IMNCI implementers‘ time was spent in applying all the steps in the protocol.

Concerning the perception that IMCI is partially implemented because non-IMNCI-trained nurses take over the care of other children waiting in queues if it is felt that the IMNCI-trained nurses are taking too long to assess a patient mixed responses were seen. Even though the seventy two of respondents,(38.9%) agreed with this statement, a significant 64 (34.6%) revealed that IMNCI was being partially implemented in some health facilities within the zone. This shows that some children tended by non-trained nurses.

With regard to whether IMNCI had reduced the number of follow-up visits by under-5 patients, the less than half 85(45.9%) agreed and 35 (18.9%) strongly agreed that IMNCI had reduced the number of follow up visits by under-5 patients, due to the thorough and accurate case management that implementation of the IMNCI strategy had resulted in the initial visit.

Mixed results were noted concerning the feasibility of always referring to the IMNCI chart booklet during the case management of under-5 patients. Sixty seven (36.2%) indicated that it is always possible to refer chart booklet during case management of every presentation, while forty eight (25.9%), 25(13.5%) disagreed and strongly agreed in their response respectively.

Among the study participants, eight two(44.3%) indicated that that the physical layout of their health facility did not make it easy for them to apply all the IMNCI skills and procedures, such as witnessing of first-dose treatment, rehydration corners, etc.

Regarding about inconsistency of case management practices of IMNCI trained and non-IMNCI trained nurses, the less than half 71(38.4%) disagreed with the with the notion that caregivers of under-5 patients prefer to been seen by nurses who are not IMNCI-trained, because their case management practices are different though the significant proportion of the study participants 48(25.9%) agreed and 25(13.5%) strongly agreed with the statement (See fig 11 below).

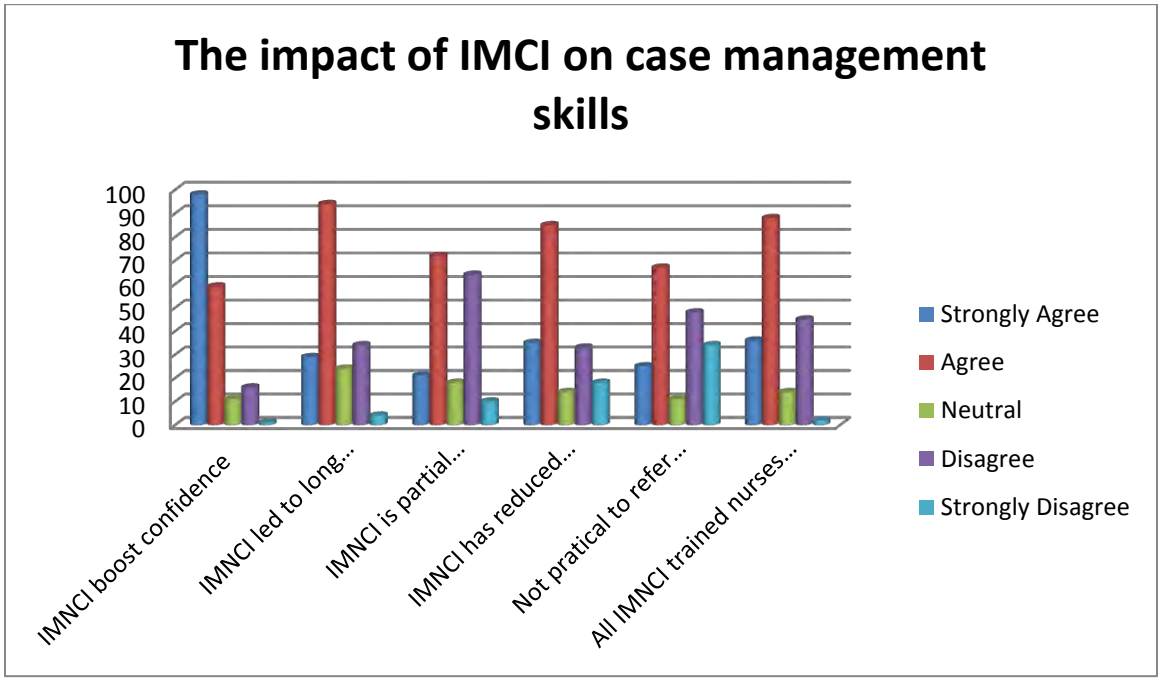

Figure 11: The Impact of on case management skills

5.11 Experiences of the nurses in implementing the guidelines and procedures of the IMCI strategy.

Among the study participants, 93(50.3%) and 77(41.6%) strongly agreed and agreed with the notion that the IMCI strategy is user-friendly to health workers.

Regarding the idea whether IMNCI is easy to understand and apply, significant proportion of resopndents,71(38.4%) strongly agreed and 81(43.8%) were agreed that IMNCI is easy to understand and apply while only 20% of respondents agreed with the statement IMNCI is difficult to understand and apply.

Out of the total respondents, 73(39.4%),71(38.4%),102(55%),and 52 (28%) disagreed with notion that IMNCI protocol is too long, IMNCI protocol is tedious, IMNCI is not practical at our health facility and IMNCI is time consuming respectively. (See fig.12 below)

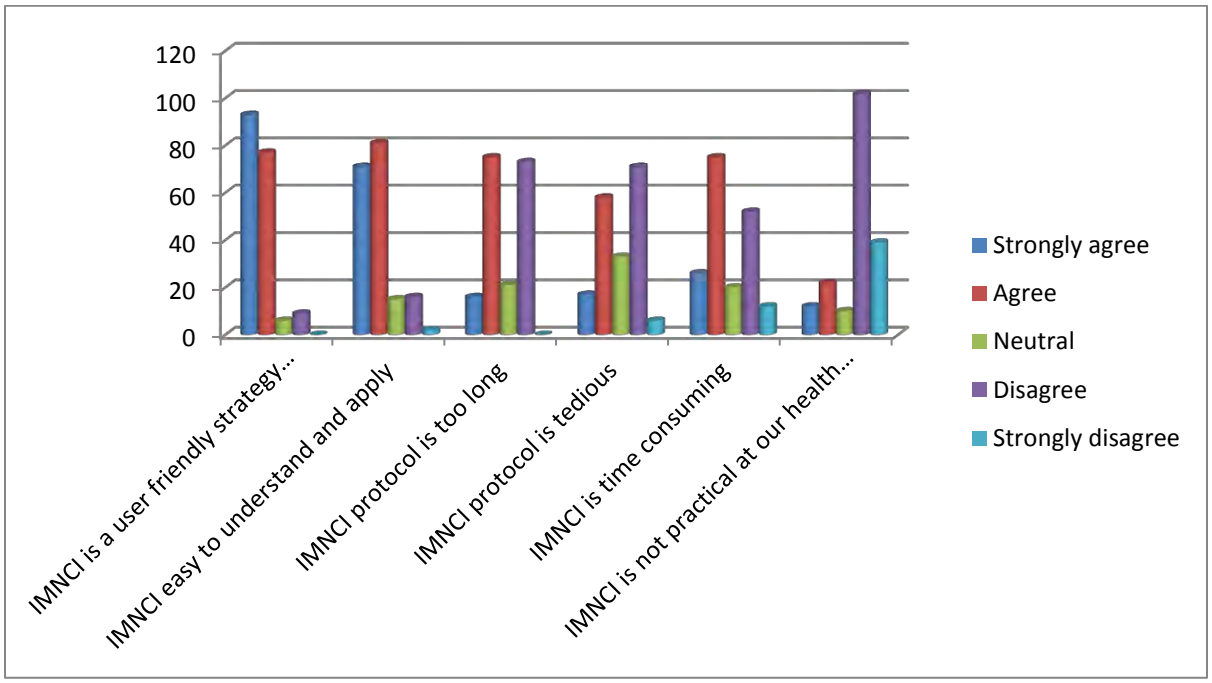

Figure 12: Experiences of the nurses in implementing the guidelines and procedures of the IMCI strategy.

5.12 Supervision

The majority of the respondents 88(47.5%)disagreed and37(20%) strongly disagreed with the statement my supervisor is not IMNCI trained.

Eight three (44.9%)of respondents disagreed with notion my supervisor does not appreciate the rationale for IMNCI.

A mixed result is observed regarding lack of supervison by IMNCI trainers. Among the study participants 76(41%) agreed with the statement while 56(30.3%) respondents disagreed with the statement lack of supervison by IMNCI trainers (See fig 13.)

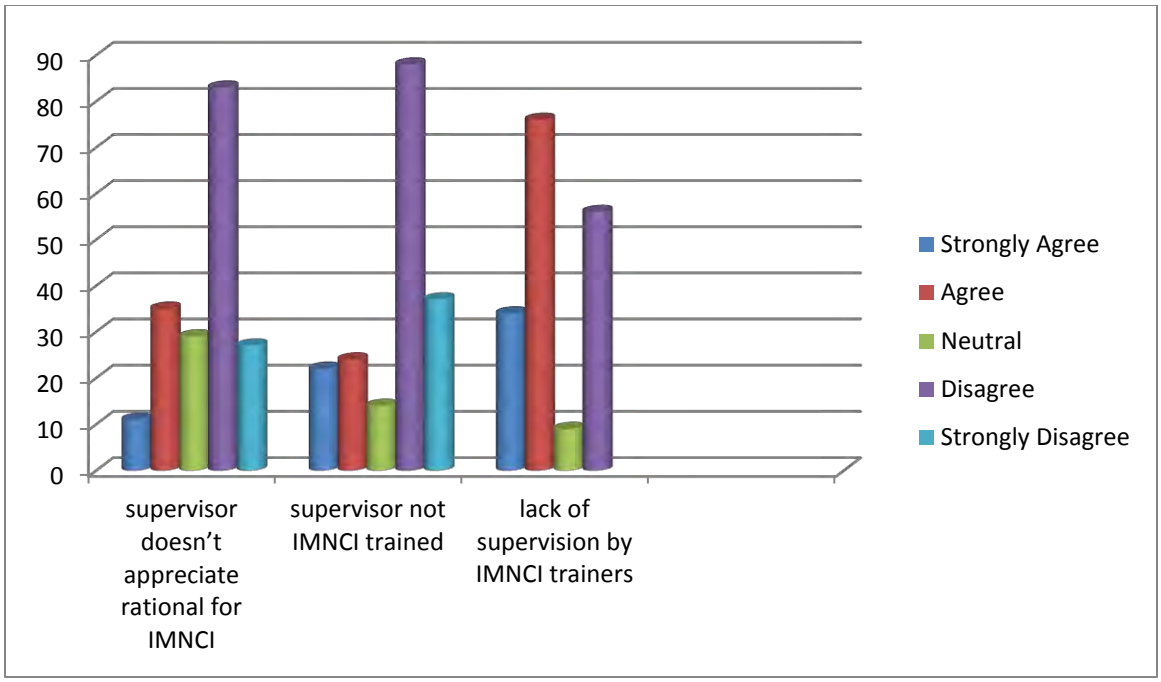

Figure 13: Supervision of Implementers.

5.13 Availability of resources to the IMNCI Strategy

Regarding availabality of resources less than half of respondents 81(43.78%) claimed that IMNCI drugs are frequently out of stock while one hundred seven 57.8% of respondents disagreed with the statement IMNCI wall charts and chart booklets are frequently unavailable.

Concerning health facility related the half of respondents,92(49.7%) agreed that their health facility is not fully equipped to support the use of IMNCI strategy eventhough the significant porportion 40.5%of the respondents were disagreed with this idea. (See fig 12.)

The results from qualitative study confirmed that inconsistent supply of IMNCI drugs this mean that there is sometimes an interreption of drug supply after the drug is out of the stock.

Regarding health facility related the indepth interview reaveled that lack of ORT corner in underfive OPD and absence of privacy in the room will result in incomplete assessment due to psychological impact on mothers because some mothers do not want their seen to be seen by strangers any other else except the providing care for their children.they also confirmed that in their health facility there is no isolated OPD for underfive children due lack of sufficient room

they are treating adult case and under five case in one room which the main reason for incomplete assessment for under five children (See fig 14).

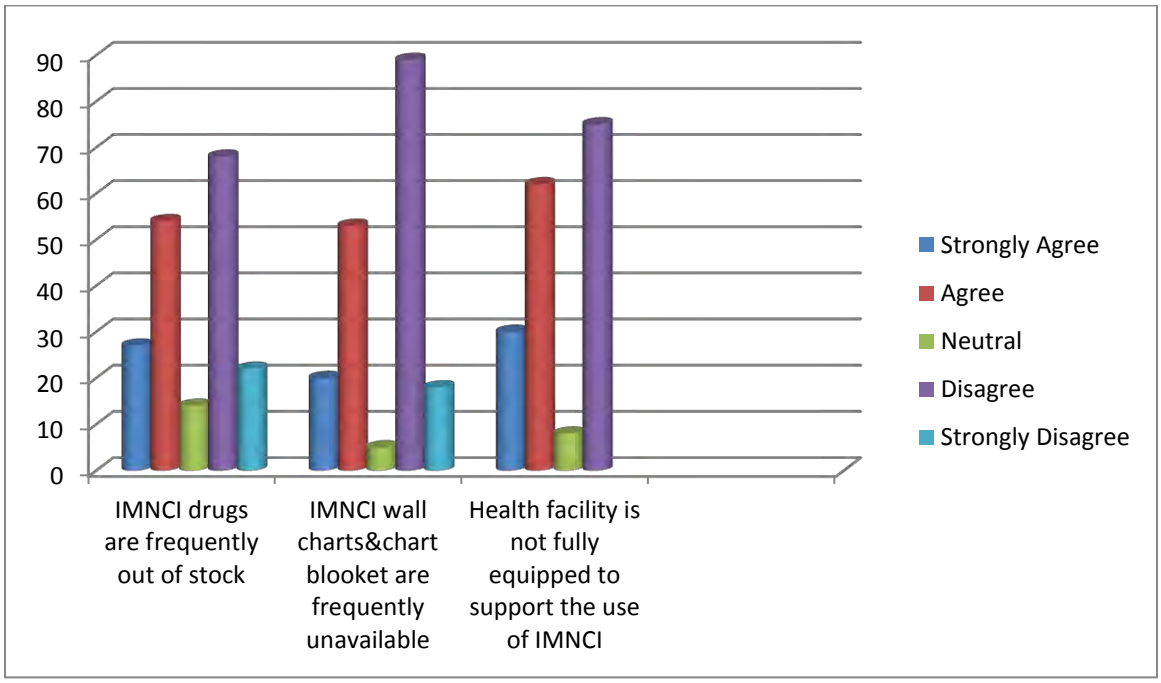

Figure 14: Availability of resources to the IMNCI Strategy

5.14 Attitudes of some clinicians and doctors towards IMCI

A mixed responses are noted regarding attitude related questions.Among study participants sixty nine(37.3%) agreed that IMNCI guildlines are too simplistic,it undermines my clicinical training while almost the same number of respondents 37.8%were disagreed with the statement.

Regarding some clinical officers and doctors attitude toward the strategy seventy two participants (38.9%) disagreed with the notion some clinical officers and doctors have negative attitude towards IMNCI strategy while significant porportion of respondents 54(29%) agreed with the statements(See fig 15 below).

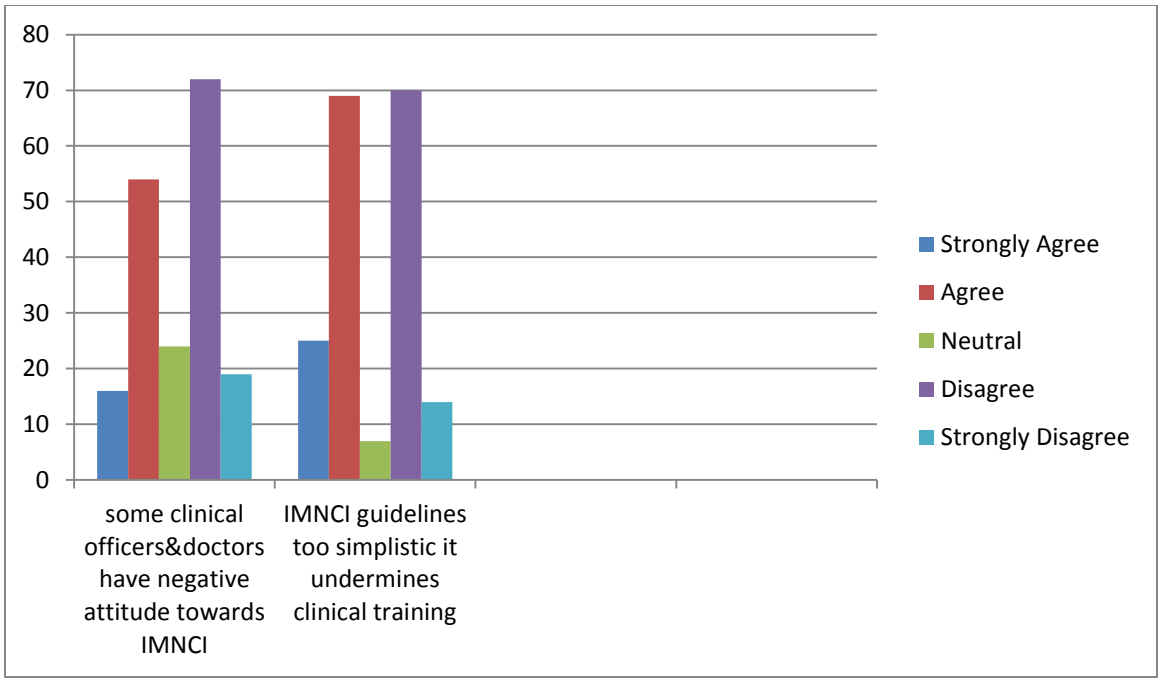

Figure 15: Attitudes of some clinicians and doctors towards IMNCI

5.15. Training of implementers

Regarding lack of follow up training by IMNCI facilitators the more than half of respondents 128(22% strongly agreed and 46.5%agreed)revealed that lack of IMNCI follow up training by IMNCI facilitators are the main challenges of implementing strategy.(See fig 16).

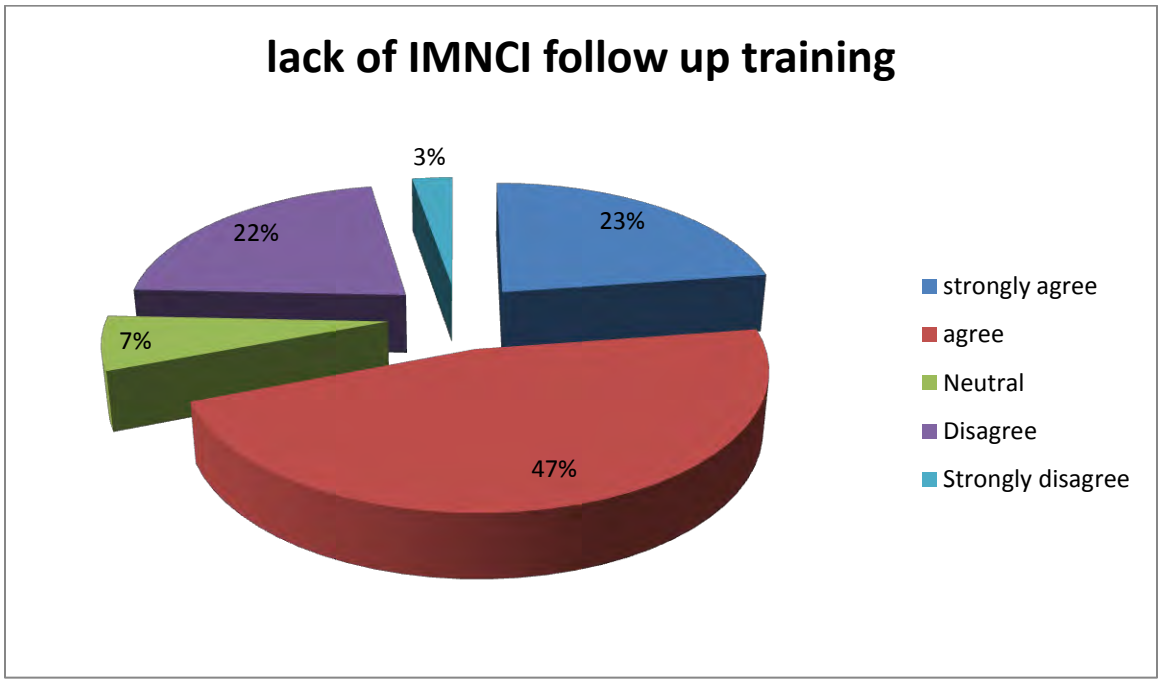

Figure 16: lack of IMNCI follow up training

5.16 Association of factors influencing IMNCI implementation by nurses in four woredas of West Arsi zone

In bivariate training[P value 0.001,COR=2.9, 95%CI: 1.581, 5.326], lack of follow up training by facilitators [P value 0.031,COR=2.07, 95%CI: 1.07, 4.04], lack of supervision [p value 0.029, COR=1.97, 95%CI: 1.071, 3.64], Perception of IMNCI strategy as difficult to understand and apply [p value 0.01, COR=2.74, 95%CI: 1.27, 5.89],Appreciation of rationale for IMNCI strategy by supervisors [p value 0.045, COR=1.99, 95%CI: 1.02, 3.91], always referring IMNCI chart booklet [p value 0.014 COR=2.112, 95%CI: 1.163, 3.832], and Always application of all stages of IMNCI[p value 0.004, COR=25, 95%CI: 1.33, 4.68] were found to have association with the implementation IMNCI in public health institutions. Socio demographic factor has no significant association with IMNCI implementation.

5.17 Multivariate analysis of factors influencing IMNCI implementation by nurses in public health institutions adjusted to possible confounding variables

By applying multiple logistic regressions the above listed variables were adjusted. Among those variables only two variables were significantly associated with the implementation of IMNCI strategy by nurses in public health institutions. Training and always referring chart bookletswas independent predictor of IMNCI implementations. Those nurses who had attended training were 2.76 times more likely to implement IMNCI than those who had not attended IMNCI training [AOR=2.76, 95%CI: 1.388, 5.51] and Those nurses who had the practice of always referring IMNCI chart booklet during every presentation of case management process were three times more like to implement IMNCI protocol than those who do not always refer chart booklet[AOR=2.95, 95%CI: 1.48, 5.89].

.

Table 3: Association of factor influencing IMNCI implementation by nurses adjusted to confounding variables in West Arsi zone, April 2016, n=185

Variable	IMNCI implementation		COR(95% CI)	AOR(95%CI)	pv
	High level	Low level			
Attended IMNCI training					
Yes	74(40%)	33(17.8%)	2.9 (1.581,5.36)	2.76(1.388,5.51)	.004
No	34(18.4%)	44(23.8%)	1		
lack of follow up training					
Yes	68(36.8%)	60(32.4%)	2.076 (1.06,4.03)		
No	40(21.6%)	17(9.2%)	1		
lack of supervision					
Yes	57(30.8%)	53(28.6%)	1		
No	51(27.5%)	24(12.9%)	1.97 (1.07,3.64)		
IMNCI is difficult tounderstand and apply					
Yes	13(7%)	21(11.3%)	1		
No	95(51.4%)	56(30.3%)	2.74(1.27,5.89)		
supervisor does not appreciate rationale for IMNCI					
Yes	21(11.4%)	25(13.5%)	**1**		
No	87(47%)	52(28.1%)	1.99(1.02,3.91)		
Always apply of all stages of IMNCI					
Yes	82(44.3%)	43(23.2%)	2.5(1.33,4.68)		
No	26(14.1%)	34(18.4%)	1		
Always referring chart booklet					
Yes	62(33.5%)	30(16.2%)	1		
N0	46(24.8%)	47(25.4%)	2.112 (1.63,3.83)	2.95(1.48,5.89)	0.014

CHAPER 6: DISCUSSSION

This study aimed to identify the IMNCI implementation and factors influencing IMNCI implementation by nurses in public health institutions of four woredas in West Arsi zone. The study finding revealed that proportion of IMNCI implementation was 58.4% high level implementation. This is below standard level established (above 68%), by WHO and UNICEF due to presence so many challenges, however, this finding is quite higher than that of the study conducted in Kenya and China which showed that, utilization and application of IMNCI concepts in the region is approximately 14%[14]. This study also contrary from the study conducted in Benin which showed Performance of individual health workers varied greatly, from 15–88 % of patients treated correctly, on average in accordance with the IMNCI guidelines [11]..

This study showed that nurses who attended IMNCI training was 2.7 times more likely to implement IMNCI strategy than those who do not attended IMNCI training. In addition nurses who always refer chart booklet during every case management process were three times more likely to implement IMNCI strategy than who do not always refer the chart booklet in every case management skills. This finding is almost consistent with studies conducted in lower resource setting country which indicates that IMNCI trained workers were two times more likely to correctly classify illness and three times more likely to prescribe medication and treat the children[21].

Similarly another study also revealed that IMNCI trained health workers are significantly more likely prescribing correct treatment than no IMNCI trained workers. This indicates that the more the nurses is IMNCI trained the more they accurately implement the IMNCI protocol [15].

The result from this study also shows that 57.8% of study participants had attended IMNCI training; which is still below WHO recommendation that at least 60% of health care workers seeing sick children in the health facilities are trained in IMNCI, however, the present finding is higher than that of the study conducted in Indonesia which showed only 43% IMNCI trained health workers. This slight difference might be due trained staff turnover and high cost of training [46, 47].

Evidence suggests that follow up training is designed to improve supportive supervision skills such as methods for skill reinforcement, records review, assessment and enhancing job designs to encourage IMCI training and yolk bad environmental factors [14]. In this study only 10.8%of participants received follow up training. The present finding is lower than the figures (78%) reported in studies conducted in Botswana and Tanzania [61-62].

Factors that hinder health care workers in the implementation of IMNCI strategy

Health system related factor

Broader health systems factors appear to challenge IMNCI implementation [20]. In present study several factors were identified as hindrance to IMNCI implementation. Some of the factors include lack of supplies 37.3%, lack of supervision, frequent unavailability of IMNCI drugs 43.78% and wall charts and chart booklets 39.4% ,unequipped health facility 49.7%, inadequate facility support and are the major identified factors. Inconsistent to this study the study conducted in Botswana showed that only 10% of respondents agreed that IMNCI recommended drugs are often out of stock and 15% of the respondents claimed that IMCI chart booklets and wall charts are often unavailable in their health facilities while Thirty-six percent of the participants responded that their health facilities are not fully equipped to support the application of IMCI skills and procedures. This difference might be due to difference in socio economic status the study area and sample sizes. In another way several studies done in different parties of the world identified similar challenges of IMNCI implementations [50-52, 55-57, 60].

Health worker related factors

Regarding health workers related factors, in this study many factors were identified as the challenge to IMNCI implementations. Among these factors untrained staff 56.2%, shortage of the staff 16.2%, lack of knowledge 8.6%, and patient-nurse ratio 46% were the major factors that were identified as the hinder of IMNCI implementation by nurses in public health institution. This was inconsistent with other studies, for instance study conducted in Indonesia and Tanzania revealed that shortage of trained staff were 43% and 49%respectively[46-47].This difference might be due to difference in economic status, study area and study period. In another way this finding is consistent with other studies in Africa [18, 20, 50-57, 60, 62].

Regarding the attitude of health worker in present study lack of good attitude, simplistic nature of the IMCI guidelines undermined their clinical training, negative attitude towards the IMCI strategy of some clinician‘s and doctors are identified in present studies. This negative attitude towards IMNCI was also identified in other health workers in Kenya and south Africa in which some doctors and clinical officers failed to accept the IMNCI approach, and they also felt that the guidelines are too simplistic and do not allow for full use of their clinical training[60].

IMNCI feature related factors

This study also tried to identify about IMNCI feature related barriers of IMNCI implementation by nurses like the time consuming nature of the protocol 54.6%and IMNCI had led to longer waiting queues 66.5%, protocol is too long 48.6%, tedious, IMNCI is difficult to understand and apply.An average consultation time in present study is 30-40 minutes 48% when using the IMNCI guidelines.This finding is slightly lower than that of study conducted in Botswana which time consuming nature of the protocol is 57%[62]. This is a challenge created by the uniqueness of the IMCI strategy and is not unique to Ethiopia only. In the Tanzanian CREHS policy documented that, the IMCI protocol is perceived as unnecessarily time consuming, and that, health workers sometimes cut corners so that they can attend to other clients awaiting their attention [20, 49]. An avareage consultation of this study was also supported with WHO recorded that ~~a~~n average IMCI consultation takes 8-16 minutes, about 2-4 minutes longer than a traditional consultation. Similarly another several studies also listed this factors as the barrier implement IMNCI protocol[55-56,60].

Limitation

The findings of this study should be interpreted in the light of its limitations. First, as in all cross-sectional studies, we can infer association but not causation from our results. Second, the result of this study depended on self-report of nurses and as a result there might be influence of social desirability; nevertheless, the study was confidential and data collectors were instructed to guarantee that their responses could not be related to them. Third, our study was limited to four woredas of west Arsi zone and hence the findings cannot be generalized to the Oromia region or the country as a whole.

CHAPER 7:CONCLUSION

- This study revealed that the proportion of IMNCI implementation in the study setting was low (41.6%).
- Only 57.3% of nurses have reported to attend IMNCI training as compared to WHO recommendation (60%).
- This study identified barriers by nurses which include: shortage of essential drugs and supplies, inadequate trained staff, time consuming nature of the protocol, lack of supervision, lack of knowledge about the strategy and lack of good attitude of nurses towards theIMNCI strategy

CHAPER 8: RECOMMENDATION

- As IMNCI training is an important predictor of IMNCI implementation, there should be increasing the number of health workers trained in IMNCI and capacitated to deliver IMNCI services by Scaling up both pre-service and in service IMNCI training. Therefore, policy makers and concerned stakeholders, government and non-government bodies should give great emphasis to training.
- Ministry of health, Regional health bureau, zonal health bureau, NGOs and other concerned bodies should have work together to provide a facility layout that allows for space and time to apply IMCI skills and procedures.
- Lack of supplies like shortage essential IMNCI drugs and chart booklet should be minimized by involving NGOs such as Save the children and other concerned bodies
- IMCI facilitators should give emphasis on IMNCI follow-up training and visits to IMCI implementers
- Training of senior manager in IMNCI strategy to boost their confidence in supervising IMNCI protocol implementers.
- Health center manager need to consider IMNCI training during daily assignment of nurses in under five OPD.
- Further Large scale study with a representative sample size is recommended to be conducted in the future.

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Annex I. Information Sheet

RESEARCH Title: Assessment of factors influencing the implementation of IMNCI strategy by the nurse in public health institutions in West Arsi zone, Oromia region, Ehiopia.

Researcher:SHEKA SHEMSI

Dear Respondent:

I am a Master's student (ID number: GSR O981/07**)** at Addis Ababa University, College of Health Sciences, School of Allied Health, Department of Nursing and Midwifery.

I kindly request you to participate in a study that is aimed at exploring the factors influencing the implementation of IMNCI strategy by the nurses in public health institutions.

The participation in this study is voluntary; you can also withdraw at any time from the study if you feel uncomfortable. Refusal to participate will not affect your work or care you shall seek at any of the health facilities in any way. Confidentiality will be ensured by not using your name or address on the questionnaire and final thesis report. There are no risks involved in participating in this study.

The study has no immediate benefits to the respondents, but will have benefits later in improving the uptake of IMNCI service utilization among children and thereby help to reduce the burden of child morbidity and mortality.

I welcome any question if you have any about the study and your participation. Should you have any questions about the research or any related matters, please contact the researcher at **+251-929-38-17-37.**

Email:shekaa2006@gmail.com

Annex II. Consent sheet

I, the under signed, understand the nature of the study, benefits, my right to voluntary participation, confidentiality and withdrawal from the study without any victimization. I have had the opportunity to ask questions and answered to my satisfaction.

I hereby freely consent to take part in this study.

Signature of the participant_____

Date_____

Supervisor Name _____ signature_____

Date_____/_____/____E.C.

Name of interviewer

Date _____/_____/_____E.C. signature_____

Your participation will be greatly appreciated.

Yours Faithfully,

Annex III. Questionnaire

PART 1: Socio-Demographic related Questionnaires nurses.

All questionnaires are completed anonymously. We would appreciate if you answer all the questions and answer as honestly as possible. Please circle on the number you select that best answers the question. Kindly make only one selection unless otherwise instructed.

Ser.no	Socio-Demographic	Response	Remark
101	Sex	1. Male 2. Female	
102	Age	___in years	
103	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Other(specify)_____	
104	level of qualification	1. MSc 2. BSc 3. Diploma 4. Other (specify) ____	
105	Marital status	1. Married 2. Single 3. Divorced 4. Widowed 5. Separated	
106	Ethnicity	1. Oromo 2. Amhara 3. Sidama 4. Other (specify)_____	

Part 2. Questions related training and factors affecting the implementation the IMCI strategy			
201	How long have you been serving as health care provider?	1. <5 yrs. 2. 5-10 yrs. 3. 10-15 yrs. 4. >15yrs	
202	Have you ever worked in a Pediatric/Children ward or under five OPD?	1.YES 2.NO	
203	If yes to # 202, How long have you been serving in under five clinics?	1. 0-5 years 2. 6-10yrs 3. More than 10	
204	Have you attended IMNCI training?	1. Yes 2. No	
205	If yes to # 204, which IMCI training did you receive?	1.pre service training 2.in service	
206	When you last attended training (Year and month of training)?	month_____ year_____	
207	What was the duration of IMNCI training?	_____days	
208	Have you received IMCI follow-up training?	1. Yes 2. No	
209	If yes to # 208, When you last attended follow up training?	Month ---------- Year -----	
210	What are the main challenges encountered in implementing the IMCI strategy?	1. Shortage of staff 2. Time consuming 3. Lack of supplies/resource 4. Untrained staff 5. Lack of supervision 6. Lack of knowledge 7. Lack of good attitude 8. Others(specify)-----	

PART.3. Question related to nurses' experience in implementing the IMCI strategy

301. Is IMNCI training considered during the assignment of daily duties to nurses at this health facility? 1. YES 2. NO

302	How often the following case management steps or skills of the IMCI case management process do you find difficult to practice?			
		always	sometimes	Not difficult
302.1	Assess the child's condition			
302.2	Classify the child's illness			
302.3	Identify treatment			
302.4	Treat the child			
302.5	Counsel the caretaker			
302.6	Provide follow-up care			
303	How often do you perform the followingIMNCIactivities?			
303.1	Checking for vaccination			
303.2	Checking for danger signs			
303.3	Checking for pallor			
303.4	Assessing fever			
303.5	Assessing diarrhea			
303.6	Assessing malaria			
303.7	Assessing cough			
303.8	Weighing the children			
303.9	Checking weight against the chart			
303.10	Checking for ear problem			

304	Which of the following statements best describes your management of a sick child at your facility?					
304.1	always apply all the stages of the integrated case management process					
304.2	I apply most of the stages of the integrated case management process					
304.3	I do not apply any of the stages of the integrated case management process					
305	To what extent do you agree with the following statements?					
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
305.1	I provide health education to the parent/guardian/caretaker of every child I manage					
305.2	If I apply all the stages of the IMCI case Management process to all under 5 patients, I will be able to see only a handful of them because of the patient -nurse ratio.					
305.3	If I apply all the stages of the IMCI case management process to all under patients, I would not be able to attend to all other patients who are not under 5s due to the patient-nurse ratio					

306	Provide an estimate of time spent on the assessment and treatment of a child using the IMCI

	case management protocol.					
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
306.1	I spend more than one hour per patient					
306.2	I spend 30-40 minutes per patient					
306.3	I spend 10-29 minutes per patient					
306.4	I spend 1-9 minutes per patient					
307	Provide an estimate of time spent on the assessment and treatment of a child without using the IMNCI case management protocol.					
307.1	I spend more than one hour per patient					
307.2	I spend 30-40 minutes per patient					
307.3	I spend 10-29 minutes per patient					
307.4	spend 1-9 minutes per patient					

308	To what extent do you agree with the following statements about IMCI strategy at your health facility?					
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
308.1	IMNCI has boosted my confidence and skills in Under 5 patient case management.					
308.2.	It has led to longer patient waiting queues because of the time spent to apply all the stages of the IMCI case management protocol per under 5 patients.					
308.3	IMNCI is partially implemented because, if the IMCI trained nurses take too long assessing the under 5 patients, non-IMCI trained nurses take over care of other children waiting in the queue					
308.4.	IMCI has reduced the number of follow-up visits by under 5 patients because of the thorough and accurate case management during initial visit.					
308.5.	It is not practical to always refer to the IMCI chart booklet in the clinic during case management of every presentation.					
308.6	All IMCI trained nurses at our health facility apply all the stages of the IMCI protocol during case management of children under 5 years.					
308.7	Our health facility lay-out does not make it easy for us practice all the IMCI skills like witnessing first dose treatment, rehydration corners etc.					
308.8.	The case management practices of IMCI trained nurses and non-IMCI trained nurses are inconsistent; hence caretakers of under 5s prefer to be seen by nurses who are not IMCI trained.					

309	Which statement describes your experience in implementing the guidelines and procedures of the IMCI-1 strategy?					
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
309.1	.IMCI is a user-friendly strategy for health workers					
309.2	IMCI is easy to understand and apply					
309.3	IMCI protocol is too long					
309.4	IMCI protocol is tedious					
309.5	IMCI is time-consuming					
309.6	IMCI is not practical to use at our health facility					
309.7	IMCI is difficult to understand and apply					
309.8	My supervisor does not appreciate rationale for IMCI					
309.9	My supervisor is not IMCI-trained					
309.10	Patient-nurse ratio does not allow for the use of IMCI strategy					
309.11	IMCI guidelines are too simplistic, it undermines my clinical training					
309.12	IMCI drugs are frequently out of stock					
309.13	Some clinical officers and doctors have negative attitudes towards IMCI					
309.14	IMCI wall charts and chart booklets are frequently unavailable					
309.15	Lack of IMCI follow-up training by IMCI facilitators					
309.16	Lack of supervision by IMCI trainers					
309.17	Our health facility is not fully equipped to support the use of be IMCI-strategy procedures					
309.18	Other (please specify :-)					